Vol. 5 No. 2

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CURRENT NOTES

The Newsletter For ATARI Owners

Published By

ACE

The Washington Area
Atari
Computer
Enthusiasts

Special Features

ANTIC'S ONLINE EDITION
DRI'S GEM SOFTWARE
ATARI DOS 2.0
ATARI 800 VS 800XL
ATARI BENCHMARK TESTS
SYNFILE+ & DOUBLE DENSITY
BOOK REVIEWS:
 ATARI ROOTS
 ABCs OF ATARI COMPUTERS

Regular Features

ACTION! ACTION * New *
ATARI SCUTTLEBITS
BATTLE BYTES
COMPUTER CAVERNS
GAMEVIEWS
MUSICAL NOTES
SECRET SUNNYVALE CORRESPONDENT
TIPS 'N TRAPS
CLUB NEWS

March, 1985

Current Notes

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Columnists: M. Evan Brooks, Jay Gerber, Roland Gabeler, Bob Kelly, Jon Smith, Stevenson, Francese, and Burke.
Contributors: Bob Danson, Rochelle Follender, Tim Kilby, Allen Lerman, Georgia Weatherhead, Terry White.

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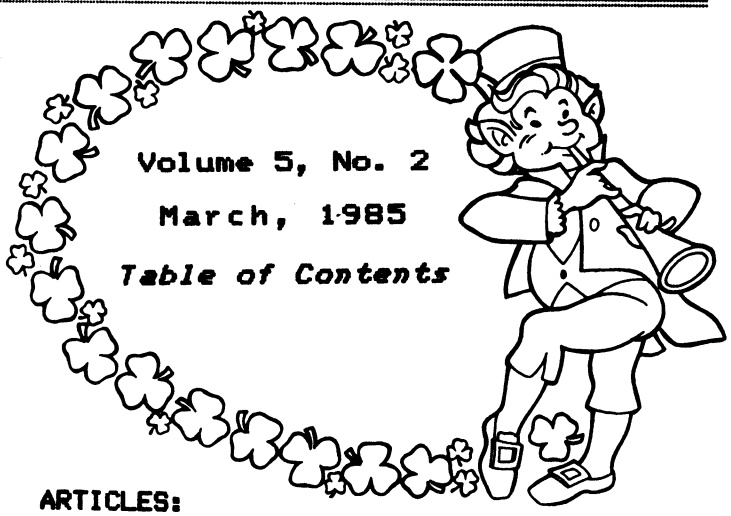
The **Washington area ACE** is a federation of Atari User Groups in the Washington metropolitan area. Current Notes is provided to members of participating User Groups (NOVATARI: Northern Virginia Atari Users Group, AURA: Atari Regional Association of Maryland, WACUG: Woodbridge Atari Users' Group, CPM: Capital ATR Peripheral Micro-Users Group, and the National Capital Atari Users Group) which are not affiliated in any way with ATARI, INC. (See inside back cover for information on joining any of the member clubs.) Opinions expressed in this publication are those of the individual authors and do not necessarily represent or reflect the opinions of any of the user groups.

Subscriptions to Current Notes are also available directly for $12/year. Send check, payable to Current Notes, to Joe Waters, 122 N. Johnson Rd., Stering, VA 22170.

Exchange subscriptions to Current Notes are available to other Atari User Groups. Send exchange newsletters to Jack Holtzhauer, 15817 Vista Drive, Dumfries, VA. 22026. Material in this newsletter may be reprinted provided Current Notes and the author, if applicable, are cited.

The editor of Current Notes is Joe Waters, 122 N. Johnson Rd., Sterling, VA. 22170, (703) 430-1215. News items, short articles, original programs, product reviews, classified ads (free to Washington ACE members), and any other material of interest to the membership are eagerly solicited.

Commercial advertising rates: full page, $50; half page, $30; quarter page, $20. Discounts are available for multiple insertions. Submit photo-ready copy to the editor. Deadline date for both articles and advertisements is the 15th day of the preceeding month. Circulation: 950 (Members 500, Consignment 300, Other 150).



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Editorial

Last month there was so much news to put into CURRENT NOTES that I had no room left for an editorial. This month I was sure to leave myself a blank page. But there is still a lot of material in CURRENT NOTES. As you may be able to sense by lifting it, this is the largest issue of CURRENT NOTES ever -- 36 pages. What's more, I have several articles that I had to hold over until next month because of a lack of space! To give you some perspective, if we printed CURRENT NOTES like a term paper, on a standard typewritter with 26 double-spaced lines per page, this document would be over 100 pages long.

Needless to say, it takes quite a while to put all this material together in a finished format. Therefore, I would like potential contributors to help out a little more with the process. Material must be in on time; if it is late it is likely to be held over. Proof read your documents so that the English is correct and you have no spelling errors. By the way, do not use any fancy formatting on your document. Special control characters generating indents, underlining, boldface, centering, etc. all have to be stripped away before the text can be put into the word processor used to produce CURRENT NOTES. All that is really needed is the text. If you want to use illustrations, send them to me by mail. Don't assume that I have all the equipment and software required to duplicate a graphics or illustration you could do on your computer. If you have material that you think the groups may find of interest that you obtained from CompuServe, other information services, magazines, newsletters, or whatever source, edit that material into something presentable. Make an article out of it. I simply don't have the time to work through notes or rough material to put together a presentable piece.

I do not mean to be critical of our authors by the above comments. I have been getting excellent support. Many individuals put in long hours writing columns and articles for this newsletter. Without their continuing contributions CURRENT NOTES could not have gone as far as it has. But we are getting new authors every month and I wanted to pass on some advise that would make the job easier for all. By the way, each author in CURRENT NOTES receives an extra copy of the newsletter with their article or column so they can impress their friends! This is as close as we can come to "payment" for your efforts.

Most of you have noticed that there is a new group in town -- the Washington Area Atari Computer Enthusiasts. This really isn't a "new" group but rather a new structure. The Washington area ACE is a federation of all of the users groups associated with CURRENT NOTES. The primary, and at the moment the only, function of the federation is to publish CURRENT NOTES. There are obvious economies of scale in publishing. The combined effort of all the clubs results in a product that no one club could easily sustain. While we would like to obtain the economies of scale that come from being a large organization, we also want to maintain the benefits of local autonomy and local groups. Each club remains an independent unit with its own set of officers, rules, meetings, and benefits.

Everyone who is a member of one of the local clubs is automatically a member of WAACE. Club members receive CURRENT NOTES, can submit articles to the newsletter, and have free access to the classified ads. Each club can use CURRENT NOTES to tell its membership about club activities: meeting minutes, coming events, library disks, club programs, etc. (However, if I receive nothing from the club, nothing is published under club news.) CURRENT NOTES regularly lists information about club officers, meetings, and how new members can join.

$12 of your club dues are earmarked to pay for your CURRENT NOTES subscription. That total should be sufficient to pay CURRENT NOTES costs. Net cost can be futher reduced if CURRENT NOTES carries advertising. Each participating club can reduce their own costs by obtaining advertisers for CURRENT NOTES. If a club finds an advertiser, gets me the final photo-ready advertising copy, and collects the bill from the advertiser, the club keeps all profits (bill for advertisement less actual cost of printing) from the advertisement. Most of the advertisements you see in this issue are, in fact, the result of the efforts of the various clubs. By the way, be sure to mention to any of the advertisers here that you saw their ad in CURRENT NOTES when you call or visit them.

Costs can also be reduced by consignment sales of CURRENT NOTES. Here, however, the actual amount of "profit" is quite small. The primary advantage of consignment sales is to let Atari owners in the area learn of the existence of the various clubs. A club may, if it chooses, order extra issues of CURRENT NOTES for placing on sale in retail establishments in its area. Clubs are billed the "marginal" cost of these issues. They keep the difference between the "wholesale" cost charged the stores and the marginal cost charged the club. Generally, CURRENT NOTES itself does not provide any consignment copies to stores.

Of course, participating clubs need not do anything to offset their costs. But the opportunity is there if they wish to take advantage of it to help hold down club dues or offset other club expenses. Note that our club dues tend to be $5 to $10 cheaper than that of the Apple, IBM, or other computer users groups in the area.

Another change you may have noticed is in your mailing label. The first line of the label is a code that indicates your club (A=AURA, C=CPM, D=NCAUG, N=NOVATARI, W=Woodbridge, S=subscriber), a three-digit member identification number (these numbers are used by CURRENT NOTES and may or may not be used by your club), and the expiration date of your subscription or club membership in the form YYMM. Thus 8512 would indicate that the last month of your membership is the 12th month in 1985. Although we maintain a mailing list, the information about your address comes from your club. Check it do be sure that it is correct and report any changes or corrections to your appropriate club representative.

Joe Waters

Joe Waters
Managing Editor

SECRET SUNNYVALE CORRESPONDENT MARCH REPORT

CNR: While we're waiting for April to get here, how are things progressing out there?

SSC: We're just receiving the XE computers now and should be on schedule for the April deliveries. The new ST series should also be ready on time as well.

CNR: What are the features of the INFINITY package and can we old-time 800 users run this software marvel?

SSC: INFINITY is a Lotus 1-2-3 work-alike package from Matrix Software. On the XE series you'll have a maximum of 3 simultaneous windows and the ST computers will support 5. For the 800 owners, we have a $100 'adapter board' - it's called a 65XE. For approximately $100 retail, you can (about April) pick up the XE computer and run this $50 package. It will probably not work with the older 'ram-cram' or bank-select memory boards. We will also be offering a Local Area Network package for our new line. It will support up to 255 computers that can up to 1,000 feet apart. The price will be less than 1/10 of Apple's $7,000 LAN system that can only support 32 cpu's.

CNR: Since everyone should be a member of a user-group to get experienced answers, what are ATARI's plans for dealing with all the questions that must be pouring in; especially with new products to be released soon?

SSC: Let me cover some items that will simplify my answer.

First, the '800' number you could call will NOT be put back into operation. This was a great idea, but we had about 40 people answering the telephones 8 hours a day. The worst thing was that, for the most part, just a lot of novice questions were being asked. I mean really elementary things like, "How do I plug in the disk drive?"

Second, the APX mailing list is still intact. We will probably make ONE mailing to those names. Although undecided on this, we recognize the need to have an outlet like APX, but we just aren't sure which way to proceed from here.

Third, we are asking the support of existing user groups. If you have a modem, you should be reading ANTIC's questions and answers on Compuserve. We are hoping to establish a user network whereby we can disseminate information to a few principal user groups who, in turn, will pass on the information to their regions. It would also be possible to provide the user groups with software for demonstration at their meetings, PRIOR to its release on the general market.

CNR: WELL, this sounds all very good. Here's to April and the new technology. See you next month for more details.

ANTIC MAGAZINES ONLINE EDITION

Compuserve, Atari Questions/Answers, Worldwide Users Network

[ANTIC magazine has instituted an ONLINE Edition on the CompuServe timesharing system. Before putting this issue of CURRENT NOTES to bed, I checked the ANTIC online edition to see what was there. The material listed below is taken from the actual online session. It is interesting in its own right, but I thought readers who have never been on CompuServe might enjoy seeing what a typical telecommunications session looks like. Thus you can learn about Atari and CompuServe and the ANTIC online edition all at once.

Note: the lines you see are not actually printed on the terminal. I have included them to show where the program stopped to wait for user input (the prompt is the exclamation point) and to give you a feeling for how the CompuServe "pages" actually appear on your terminal screen. Similarly, the 3-column format more closely resembles the output to a terminal screen. Where there is a long absense of lines, I have used the "S" option which causes the output to scroll continuously rather than page-by-page. Joe Waters]

==========
!go antic

Request Recorded,
One Moment, Please
Thank you for Waiting

CompuServe Page ANT-1

WELCOME TO THE
ANTIC MAGAZINE ONLINE EDITION
AND WORLDWIDE USERS NETWORK

Enter: "S" for WHAT'S NEW
"M" for ANTIC MENU

!S
==========
CompuServe Page ANT-4

*

WHAT'S NEW
IN ANTIC ONLINE!
(updated 2-6-85)
*

Next issue's Table of Contents
SNEAK PREVIEW- ROBOTIC Article
GO 200
*

All NEW ANTIC ED's Bulletin
GO 400
*

1/1/85 A MESSAGE TO YOU FROM JAMES CAPPARELL -- PUBLISHER OF ANTIC

Congratulations. You're one of the very first CompuServe subscribers to look in on this history-making electronic magazine for Atari computerists.

ANTIC ONLINE has lots of exciting and unique interactive videotex features that you're really going to enjoy. Any features not yet operational should be online before the end of January.

Last page. Key M for menu !go 400
==========
CompuServe Page ANT-400

ANTIC ONLINE NEWS
1. Using This Section
2. SPECIAL EXCLUSIVES
(updated 2/6/85)
3. Online News Bulletins

Last menu page. Key digit or M for previous menu. !1
==========
CompuServe Page ANT-401

USING ANTIC ONLINE NEWS

SPECIAL EXCLUSIVES are the newest and most significant news dispatches for Atari users! Permission to reprint these articles is granted ONLY to newsletters of users groups that have joined WUN.

ONLINE NEWS BULLETINS is the chronological library of previous and specialappeal news files.

Last page. Key M for menu
!m
==========
CompuServe Page ANT-400

ANTIC ONLINE NEWS

1. Using This Section
2. SPECIAL EXCLUSIVES
(updated 2/6/85)
3. Online News Bulletins

Last menu page. Key digit
or M for previous menu.
!2
==========
CompuServe Page ANT-402

ANTIC ED'S BULLETIN
FEBRUARY 1985

Key S or <ENTER> to continue !S
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By Nat Friedland, Antic Editor

As you know from ANTIC'S CES instant coverage last month, Sig Hartmann, president of the AtariSoft division, promised to arrange for Atari's top managers to answer the best questions from readers submitted each month by ANTIC ONLINE.

This is an important development and Hartmann was laudably insistent that he wanted to open channels of feedback for serious Atari users. He made his proposal during the meeting with ANTIC and Atari president Sam Tramiel who firmly agreed with the plan to answer ANTIC reader questions monthly.

Right now the Atari management is pushing all-out to deliver the new 16-bit ST computers by April. So the time pressures may be too much for the company to provide the detailed responses that Tramiel and Hartmann envisioned. Still, we are confident that the new Atari will do its best.

Here, right on schedule, is the first batch of monthly questions turned in by ANTIC at the end of January.

Due to delays in being put online with our interactive I/O Board feature, some of these January questions come from trends in letters mailed to the magazine by readers.

Admittedly, the mail-in queries tend to be about "old business" that was inherited from the old Atari. But these are significant concerns for the hundreds of committed Atari users who write to the magazine each week. And the questions need to be laid to rest once and for all!

We also enclosed to Hartmann a downloaded printout of one of the first CompuServe responses to his invitation for questions.

Squire's question. We will print these later in the column.

And now here are ANTIC'S January questions to Sig Hartmann and Atari:

1. Is Atari's debugged Revision C BASIC available to XL owners? We still get letters every week about this! Atari representatives announced in the August, 1984 Antic that Revision C would be available for $15, and to the best of our knowledge this never took place.

2. Is the 850 Interface going to be made available by Atari again -- or would Atari be willing to let some third party manufacturer provide it?

3. What is the extent of current Atari Customer Service Operations? It is almost excruciatingly difficult for Atari owners to get through on the new service toll-line (408) 745-4851.

So...

How many service reps are on duty? How many incoming lines are open? What are the most common problems that Customer Service successfully resolves?

Are there plans or a timetable to put on more representatives and additional phone lines?

AND NOW...on to the new ST questions:

4. Is April still on target as the delivery date for the ST computers?

5. New operating systems have historically contained bugs, so what kind of update protection will Atari give to ST buyers?

6. Will a machine language monitor be built into STs? Is an assembler editor being developed for STs? How soon will we have ST versions of C and Pascal?

7. What developer commitments do you have for getting popular existing software ported over to the ST via GEM?

8. Will the new 5.25-inch disk drives be true double density?

9. What are the technical reasons why the STs cannot have memory expansion? After all, it is now recognized that open architecture play a large part in the success of the Apple II and the IBM PC.

AND NOW FOR SOME ANSWERS

Now that you've seen your questions ANTIC has sent out to Atari, we should tell you some answers we already have obtained from management there.

In response to a question from Michael Squire, Atari says that the 8-bit 130XE will definitely have the parallel bus -- despite the fact that the last-minute decision came too late to put it into the CES brochures. We don't see how the PBI could use the cartridge slot, since it will have the 5-volt power booster enhancement.

As for the DOS to be used by the XEs with the coming 3.5-inch disk drives -- DOS 2.5 doesn't handle it. Another DOS will have to be written later. The goal will be to create a compatible DOS that has hooks for both 3.5-inch drives and standard 5.25-inch floppies.

SOFTWARE DEVELOPER HINTS

Digital Research is shooting for March 28 to make the GEM Toolkit and Atari's Specs for Software Developers available to all interested legitimate developers. At that point developers will be able to use an IBM PC to begin work on porting programs to the ST.

Meantime DRI's invitational Feb.14-15 Developer Seminar is booked full, even at almost $1,400 to attend. This fee gets you the Toolkit and specs and apparently some licensing rights.

If you want to get on the list to receive this material as it becomes available, you would well advised to send request letters to the GEM Software Development Team at both Atari and DRI.

Priority will be given to developers with existing commercial programs they are willing to port to the STs. Atari will also be looking hard at the Macintosh software experience of would-be developers. Pascal and C will be recommended as the most transportable languages for ST development via GEM.

Last page. Key M for menu !
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CompuServe Page ANT-400

ANTIC ONLINE NEWS

1. Using This Section
2. SPECIAL EXCLUSIVES
   (updated 2/6/85)
3. Online News Bulletins

Last menu page. Key digit or M for previous menu. !3
==========
CompuServe Page ANT-403

1. Profile of new prod. line
   (1-7-85)
2. EPYX/LUCASFILM partnership
   (1-7-85)
3. GEM for new ST series
   (1-7-85)
4. Tramiel talks to Software
   Publishers Association
   (1-7-85)

Input a number or key
<ENTER> for more choices
!
==========
CompuServe Page ANT-404

1. CES WRAPUP- Model numbers, prices, availability. (1-10-85)
2. CES WRAPUP- New software summaries, incl. INFINITY (1-10-85)

Last menu page. Key digit or M for previous menu. !M
==========
CompuServe Page ANT-10

MAIN MENU

1. ANTIC CENTRAL
2. PRODUCT INFORMATION
3. COMING ATTRACTIONS
4. ENTER SIG*ATARI
5. WORLDWIDE USERS NETWORK
6. ANTIC ONLINE NEWS

Enter your selection number, or H for more information.
!5
==========
CompuServe Page ANT-300

WORLDWIDE USERS NETWORK

1. Using This Section
2. Users Group Directory
3. Events Calendar
4. PALS Directory

Last menu page. Key digit or M for previous menu.
!1
==========
CompuServe Page ANT-301

During the last five months, ANTIC has seeking new ways for Atari owners to become members of regional (or national) user groups. We all know that user groups are one of the best ways to get the most out of your Atari.

ANTIC ON-LINE supports Atari users even if they can't travel any further than their phone line.

Worldwide User Network (W.U.N.) is a new way ANTIC is providing support -- we're giving users interactive communication with the Atari world. (including regular visits with Atari executives and the best independent developers). All Compuserve members will have unrestricted access to the entire EDITION -- plus, a designated representative from each W.U.N. licensed group will have four special ANTIC-supported benefits.

1. The ON-LINE EDITION will list all licensed groups (geographically) for reference by new owners. This listing will be promoted monthly in ANTIC Magazine.

2. ANTIC is offering quality newsletter material monthly to the editors of eligible user groups. This material will include the latest news about Atari products and interviews with key programmers and marketing executives. (ie, our November Tramiel Press Conference and January CES reporting)

3. ANTIC ON-LINE will have a National Current Events Calendar. The user group representative will be able to upload announcements for upcoming events; ANTIC will format them and display them for the entire community.

4. The designated user group representatives will have direct access to ANTIC editors for questions. These questions will be given special attention.

To determine eligibility we need one thing. ANTIC has already mailed out 600 questionnaires to the user groups we're aware of. Your group needs to fill out the questionnaire and return it to us with the most recent copy of your newsletter. If your group hasn't received a questionnaire, call ANTIC (415/957/0886) and ask Gary Yost to send you one.

ANTIC is on-line now, but W.U.N. service will not be 100% operational until we establish the first group of W.U.N. members. There will be no fee for the license, and it will include more features in addition to the above telecommunication benefits.

Therefore, we need your feedback as soon as possible. Any questions to us can also be directed to the ONLINE I/O BOARD here in ANTIC CENTRAL (menu option 1). Or email us at 76703,1052

The menu for this section will look exactly like this:

WORLDWIDE USERS NETWORK

1. Using This Section
2. Users Group Directory
3. Events Calendar
4. PALS Directory

(section descriptions)

2. USERS GROUP DIRECTORY shows you where to find your closest Atari Users Group that has joined W.U.N. (Worldwide Atari Users Group Network).

3. EVENTS CALENDAR tells you about upcoming local presentations of W.U.N. users groups.

4. PALS DIRECTORY is the long demanded exchange for Atari owners who wish to make contact with others sharing their interests. Follow the prompts in this file if you wish to log on.

Permission to reprint ONLINE SPECIAL EXCLUSIVES is granted ONLY to newsletters of users groups that have joined W.U.N.

Last menu page. Key digit or M for previous menu.
!2
==========

CompuServe Page ANT-234

*** Coming soon ***

Approved users groups in our Worldwide Users Network will have a unique opportunity to appear in this directory.

Last page. Key M for menu
!3
==========
CompuServe Page ANT-235

*** Coming soon ***

Approved users groups in our Worldwide Users Network will be able to list their upcoming meetings in this section. Look here for other events of concern to the Atari world, as well.

Last page. Key M for menu
!4
==========
CompuServe Page ANT-236

Our listing of Atari Pen Pals will appear in this section soon. You'll be able to instantly discover others like yourself who seek computer companions.

Last page. Key M for menu
!off

BUY REAL TELECOMPUTING POWER
with the new
ATARI 1030 MODEM/SOFTWARE PACKAGE

With this new ATARI MODEM/SOFTWARE PACKAGE, you get powerful telecommunications capabilities. Whether you're a new owner or an experienced programmer - this product is for you! It connects directly to the phone line and to the computer via a peripheral cable (included): no expansion module needed!

The 1030 Modem features built-in software to enable you to telecommunicate without having a disk drive! However, if you do have a drive, the new software on the disk provided will enable you to upload and download files and programs.

Retail price
$99.95

Your cost
$79.95

The disk has the following programs on it:

AMODEM features the XMODEM protocol for file and program transfers to/from BBS's.

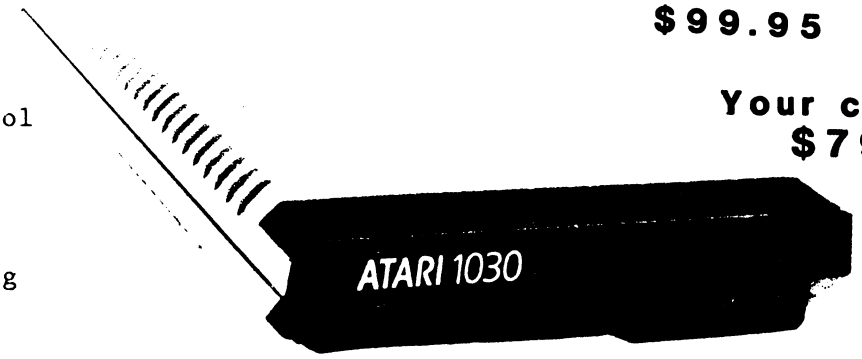
TSCOPE used with COMPUSERVE's A-Protocol for transferring files, e.g. downloading Public Domain ATARI programs. Also has autodial/autolog-on features.

DISKLINK supports file transfers between two ATARIs running either ASCII text or modified XMODEM protocol.

The equipment features:
- 300 BAUD full duplex communication over dial lines
- Hi-reliability circuitry fully burned in and tested
- Rugged hi-tech enclosure designed to fit under a desk telephone
- Modular jack for direct connection to the telephone line
- Total compatiblity with the Atari 400, 600XL, 800, 800XL, 1200XL, 65XE and 130XE computers

The unit comes complete and is easy to install. You will also receive a free hour on Compuserve!

Get on-line and download free programs from local BBS's and Compuserve! Or use it to get access to the Dow Jones News Retrieval Service (get stock prices as fast as your broker can!); or to access Western Union EASYLINK or other E-Mail services!



YES! I want to get Telecommunications Power!
This special offer consists of:
- 1 ATARI 1030 Modem
- 1 Disk with New Communication Software
- Free Introductory time on Compuserve
- Free Introductory time on Dow Jones

The suggested retail price is $99.95
My price is $79.95. Please send me _____ unit(s) at $79.95 plus $2.55 shipping and handling for a total $82.50 for each unit.

_____
Name

_____
Address

_____
City State Zip

Please make check payable to YOUNG DESIGN. Virginia residence add 4% sales tax. Allow 1-2 weeks for delivery.

Send Coupon and Check or Money Order to:
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P.O. BOX 3269
Falls Church, VA 22043
(703) 448-8939

Dealer Inquiries Welcome

ATARI ROOTS:

A Guide to Atari Assembly Language

(Mark Andrews, DATAMOST, Chatsworth CA; 1984 $14.95)

Reviewed by Tim Kilby

A programmer must choose a computing language that best suits his or her needs. If the effort is to be recreational, or maybe educational, a high-level language such as BASIC or LOGO is a good choice. Programs written for mass markets and sophisticated applications must be written for maximum speed and power in the most efficient language practical. Assembly or C languages would then be good choices.

BASIC is usually the first language today's home computerist learns. How then does one move on to an ultra-efficient language like Assembly. The two most important things that one accepting the challenge must have are commitment and good technical references. Atari Roots helps fill the bill in the case of the latter.

Assembly language is a strangely different world of unusual numbering systems, language syntax, and hardware registers. Want to learn exactly how to print a word on the TV screen? . . . from the computer's point of view? Well, Assembly language makes you learn the principles of how to do such things.

Atari Roots begins by explaining many new terms that must become second nature: source code, memory address, assembler, object code, and mnemonics. Then it covers 8-bit binary and hexadecimal numbering systems. Thereafter, each chapter introduces new Assembly language instructions and puts them to use in simple programs. As you learn the language you will also be learning the hardware system that does such great things.

The book doesn't assume that you already know how to use an assembler program either. The two most popular assemblers, Atari Assembler Editor and OSS MAC/65, are referenced throughout the book. In fact, had this book been around when I first started learning this language, I wouldn't have bothered with the manuals that come with the assemblers but started here first.

It is inevitable that learning such a highly technical language means learning some very unusual syntax. Mark Andrews keeps the techno-jargon to a minimum and keeps the reading as light as possible. Most critical points are illustrated with refreshingly humorous drawings.

The question of how complete is this paperback must come to mind. Certainly, it should not and could not be your only reference. An appendix fully lists appropriate additions to your needed library. Other publications better describe the intricacies of the Atari hardware. But one could not learn Assembly language programming from those publications. It has been a long wait for an accurate, comprehensive, beginners' text for the Atari Assembly language programmer. If you have the commitment, do yourself a favor and buy Atari Roots first.

ABCs of Atari Computers

(David Mentley, DATAMOST, Chatsworth CA; 1984 $14.95)

Reviewed by Joe Waters

I received this book from DATAMOST a couple of months ago. I initially glanced at it and saw an alphabetical listing of Atari-related words. This didn't appear particularly exciting so I put it on my shelf and, with my normal hectic schedule, promptly forgot about it. Then, over Christmas, I had some time and started looking at it more carefully. I was quite surprised -- and pleased. This was far more than a simple alphabetical listing of computer terminology. David Mentley was president of A.B.A.C.U.S., a very active Atari User Group in San Francisco, for over a year and a half. In this position, he had the opportunity to review thousands of Atari newsletter articles. From these and other sources he has provided a compilation of the tips, tricks, and lore for the Atari computers. Included are a number of useful public domain programs (for example, the AMODEM terminal program, an AUTORUN.SYS builder, a routine to disable the break key, a utility to delete lines from your BASIC programs, and many more.)

As I read through the book, I was very impressed not only with the contents, but also the simplicity and clarity of the writing. This book really was a treasure trove of useful Atari information -- explained in plain English!

But, why should you believe me? After all, different people have different ideas about what constitutes good information and good writing. Therefore, I thought I'd let you judge for yourself. I called up the publisher and asked if we couldn't excerpt parts of the book and print them in CURRENT NOTES. This would serve two major purposes: it would pass on some excellent information and at the same time give you a first hand look at the inside of this little gem of a book.

Rather than provide items at random, I choose a particular theme, telecommunications, and extracted relevant items from the book. This seemed to fit in nicely with the review of the ANTIC ONLINE Edition printed elsewhere in this issue. Next month, if space permits, we'll try another theme. Meanwhile, here are some **Telecom ABCs.**

ACOUSTIC COUPLER - One method of connecting a modem to the Atari computer is through an ACOUSTIC COUPLER. The coupler consists of a speaker and a microphone which allows the telephone handset to be used to transfer data. The signal is transmitted by a combination of high and low frequencies which carry the stream of data. An accoustically coupled modem is subject to inerference from a stereo or tv if the music or volume is too loud. A DIRECT CONNECT modem is not subject to this interference.

AMIS - AMIS is the Atari Message Information Service. MACE (Michigan Atari Computer Enthusiasts) developed AMIS and donated it to the public domain. Atari Users Group Support modified the program somewhat and distributed it to users groups. Many clubs use AMIS as their BBS

although many modifications are developing. This means that not all of the commands below are found on all bulletin boards and some may have extra commands. AMIS is very easy to use. Once you get familiar with the basic structure, you will be able to talk on many Atari BBSs around the country.

Note:CNTRL+X(Stop), CNTRL+S(Pause), and CNTRL+Q(Resume) Transmission.

The most common AMIS Commands are:

A - ASCII to ATASCII toggle
B - Bulletins put here by operator
C - Callers file to list previous callers.
D - Download files to your computer
E - Enter message into the system
F - File directory for downloading
G - Goodbye, adios, hang-up
H - Help for using AMIS
K - Kill messages which you have left
L - Line feed switch
Q - Quick summary of messages
R - Read full messages
S - Scan subjects
T - Time of day and date
U - Upload files from your computer
W - Welcome message
X - eXpert user mode
Y - Yell for SYSOP
? - Short list of functions

AMODEM - AMODEM is a versatile public domain terminal program written by J. Steinbrecher. AMODEM features the ability to transfer binary files access and download CP/M bulletin boards, save files to cassette, and also includes the XMODEM Christensen error checking file transfer protocol. Separate documentation on AMODEM is provided elsewhere on this disk.

ANSWER MODE - When a modem is set in the ANSWER MODE, it emits an audible tone (at 2025 or 2225 HZ) while it is waiting for an originating signal. When you dial a bulletin board system and hear the high pitched squeal from the other end, you are hearing a modem in ANSWER MODE.

ARMUDIC - ARMUDIC is a bulletin board system for Atari computers. ARMUDIC is not a public domain system. The name ARMUDIC is derived from the original telephone number for the system in Washington, DC 202-276-8342. [Note, although we retain the name ARMUDIC, the ARMUDIC BBS is now being run under the FOREM BBS software. JW]

ASCII - American Standard Code for Information Interchange. ASCII is a standard technique for representing characters with eight bits of data (1s or 0s). Only 128 of the characters are officially assigned. With eight bits, there are 256 different characters possible. Half of the 256 characters are inverse video copies of the other half. ASCII is used to communicate with other computers through modems: however, the Atari computer uses a modification of standard ASCII called ATASCII.

ASYNCHRONOUS TRANSMISSION - In telecommunications (using a modem to connect computers), the dialogue between computers can be very structured and coordinated (synchronous) or it may be randomly interactive (asynchrounous). In ASYNCHRONOUS TRANSMISSION, the time intervals between characters may be of unequal length and characters are separated by start and stop elements or bits at the beginning and end of each character. This is the only type of communication possible on the ATARI computer.

ATASCII - ATAri Standard Code for Information Exchange. A version of ASCII which has identical codes for alphanumeric characters but differs in the first 32 characters (the control characters) and in characters 123 through 127. A translation is required when transferring ATASCII code through modems or the control characters may be interpreted in a way that transmission will be stopped. The difference is an artifact of the way that the Atari Operating System authors attempted to work around the way that the ANTIC chip handles characters. In high resolu tion character modes, the right seven bits of the byte are used to generate the character graphics address and these match ASCII codes. When large character modes are used (GR.1 or GR.2), only six bits are used for the character and the other two specify colors. If ASCII codes were used, this would allow either upper and lower case OR graphics characters and numbers, but NOT upper case and numbers. ATASCII swaps lower case and numbers to allow uppercase and numbers simultaneously in large character modes.

AUTODIAL - If you have a Hayes Smartmodem or another brand capable of automatic dialing, you can use your keyboard to dial your favorite BBS. The command to AUTODIAL with the Hayes is ATDT 5551234 where 5551234 is the phone number you want to call. The command ATDT is given while the terminal program is running and is in the terminal mode. The 'AT' puts the modem at 'ATtention', the 'D' stands for 'Dial a number', and 'T' is for Touch tone dialing. If you have a rotary phone, use 'P', for pulse dialing, instead of 'T'.

BAUD - A unit of signal speed used in communications, particularly with modems and terminal programs for personal computers. The term BAUD is derived from the last name of J.M.E.Baudot, a nineteenth century Frenchman who developed the Baudot code for telegraph transmission. BAUD is the number of discrete signal events per second, usually meaning the number of bits per second. Trans mission at 300 BAUD is roughly equivalent to 37 characters per second. There are eight bits per ASCII or ATASCII character with a stop bit and a start bit to separate characters. The most commonly used baud is 300, although 1200 baud modems are becoming less expensive and popular.

BULLETIN BOARD - A revolution is sweeping the country because of the availability and low prices of computers and communications devices. BULLETIN BOARDs are a major part of this revolution. A BULLETIN BOARD is a computer with a BULLETIN BOARD program, auto-answer modem, and a telephone line. Many users groups have set up BULLETIN BOARDs as a central exchange for ideas and public domain software. Messages are typed in by callers and stored on

the BBS disk to be read by one or all of the future callers.

Other uses of a BULLETIN BOARD are for uploading or downloading programs. Uploading involves sending a BASIC LISTed program to the BBS for others to read or receive. Downloading involves taking a copy of the program through the telephone line and modem and saving it on tape or disk at your own location.

HALF DUPLEX - In modem communications, HALF DUPLEX refers to two way transmission of data which does not occur simultaneously. Most Bulletin boards are set up for full duplex operation. If your modem or modem program is set up for HALF DUPLEX and you call a system which is on full duplex, you will see two copies of each key you hit; one from your computer and one which is bounced back from the remote system. Just switch your modem or program to full duplex to fix this situation.

INTERFACE MODULE - The 850 INTERFACE MODULE is a conversion device. The interface module takes the high speed serial data from the computer and converts it to a parallel bit signal for printers and also a controllable speed serial bit signal for modems and other devices (RS 232). In order to use the 850 interface, you must have it turned on BEFORE the computer is turned on. The reason is that a handler program contained in ROM in the 850 is loaded into the Atari computer. You will hear a loud and steady tone letting you know it is successfully loaded.

ORIGINATE MODE - A modem in the ORIGINATE MODE is ready to begin talking to another modem in the answer mode. The modem in the answer mode will begin making a high pitched signal. The modem in the ORIGINATE MODE will begin transmitting when it hears the 2025 to 2225 HZ tone at the other end. Most Modems switch automatically between answer and originate.

PARITY CHECK - In modem communications, a PARITY CHECK is a routine which adds all seven of the bits which makes up an ASCII character (byte) and compares the result to a known outcome. The sum of the bits will be either 1 or 0, depending upon the character. One bit may be reserved to check whether the sum is truly the 1 or 0 that it is supposed to be. An error due to line noise may have caused a bit to be transmitted incorrectly and a PARITY CHECK can help identify such errors. A parity error can be signaled with a flag, such as an inverse X. Note that it is still possible to have an error in transmission and not have a PARITY CHECK error. Atari to Atari communications usually do not use the PARITY CHECK since all eight bits may be used for ATASCII characters.

RS232C HANDLER - The R: device is not resident in the OS ROM. This means that when you start up your system, you do not have the ability to use the RS232 port unless you do several things. First, make sure the 850 interface is connected to the serial bus via the black cables used for disk drives and computer. You must have the 850 ON when you boot the system. You will hear a two or three second tone after DOS is booted in, assuming you have your TV volume turned up. This tone is the signal that the RS232 handler program has loaded in. Voila, you now have a new device added to the handler table. A modem, voice synthesizer, or other device can be attached to the serial port on the 850.

COMPUSERVE - CompuServe has a Special Interest Group which is dedicated to Atari users. To get to the SIG*ATARI, type GO PCS-132 after you are logged on. This is a very good place to catch up on the latest rumors and news about Atari computers.

TERMINAL PROGRAM - A software package which lets your computer act as a computer terminal. That is, with a modem and the proper interface, you can communicate over a standard telephone line with other computers (and people). There are several fine public domain terminal programs and some excellent commercial packages. Jonesterm and AMODEM are in the public domain. Syn-Comm from Synapse, Teletalk by Datasoft, Teletalk by Tronix, and Chameleon by APX are some commercial packages.

XMODEM - XMODEM is a terminal program used primarily for CP/M based computers. The important feature of XMODEM is the error checking technique which sends a checksum after each group of 128 bytes is transferred. This is known as the XMODEM protocol and it allows highly reliable communications between computers. The AMODEM program contains the XMODEM protocol. Ward Christensen, a prolific public domain CP/M author, is the originator of the Christensen XMODEM protocol.

ACTION! Action

by Jon Smith

In this, the first installment of ACTION! Action in Current Notes, I will attempt to sell as many of you on ACTION! as possible.

ACTION! is a relatively new language from Optimized Systems Software (OSS has produced many other fine products including Atari BASIC and DOS, BASIC XL, and MAC/65 just to name a few). It is available on a cartridge for $100 retail. (Discount prices range from $60 to $70.)

Many people seem to feel that learning a second computer language is not worth the effort, and that BASIC is good enough for their needs. In the following paragraphs, I will present several key reasons to learn ACTION!.

For starters, ACTION! is much faster than BASIC. I'm sure you've heard this claim many times. As an example of the speed difference, execute the following program in BASIC:

```
10 FOR I=1 TO 50000:NEXT I
```

Now, execute this in ACTION!:

```
PROC Test()
CARD I
FOR I=1 TO 50000 DO  OD
RETURN
```

These two programs both perform the same function: to count from 1 to 50,000. In case you don't have an ACTION! Cartridge handy, I'll spoil the surprise by telling you the results: BASIC took nearly two minutes (110 seconds), while ACTION took a mere one second!. While this is a simple example, it is effective in demonstrating ACTION!'s superiority over BASIC in the area of speed.

One might think that with such speed, a language would be very complex. Not so. ACTION! has many commands that are identical or very similar to BASIC's. This was done intentionally, to ease the transition from BASIC to ACTION!. In ACTION!, you define new commands. Each command uses already existing commands, including ones that you yourself defined. Then when you write the main program, you utilize commands that you created and tailored to your needs. I know that I am not alone in the opinion that ACTION! is easier to program than BASIC.

Now that I have [hopefully] sold BASIC users on ACTION!, I'll attempt to convert you assembly language hackers. Calling machine language subroutines in ACTION! is much easier than in BASIC. In BASIC, you passed arguments onto the stack, while in ACTION! arguments can be passed directly to the Accumulator, X register, or Y register. Variables can be defined to reside at specific memory locations. For example:

```
CARD ICBLL=856
ICBLL=1000
```

This would store the low order byte of 1000 at 856, and the hi order at 857. ACTION! programs compile directly into machine code, sometimes jumping to a machine language subroutine in the cartridge. ACTION! allows for machine language to be coded directly into your program. Imagine the ease of accessing CIO directly, through the utilization of ACTION!'s features.

Also of interest to assembly language programmers - each program routine's address can be determined. Therefore, since ACTION! programs compile directly into machine code, VBlank routines as well as DLI routines could be written in ACTION!. Another interesting application of this feature is having a program rerun when SYSTEM RESET is pressed.

Many computer experts agree that "C" is the language of the future. In fact, the UNIX operating system is written in "C". You're probably asking, "So what?". Well, ACTION! is very similar to "C". Therefore, learning ACTION! now will greatly simplify learning "C" later.

The editor used to create ACTION! programs is also excellent. I don't want to go into detail about the editor, however, so suffice it to say that it is better than many commercially available word processors.

One of the few drawbacks of ACTION!, as of this writing, is the non-availability of books. However, the reference manual is excellent and, with an understanding of BASIC, you should have no difficulty understanding it.

OSS also offers two additional products related to ACTION!. The Runtime Library allows you to run your ACTION! programs without the ACTION! Cartridge, and the Action Toolkit (Formerly Programmer's Aid Diskette) contains many useful commands. Both of these have been reviewed in past issues of Current Notes.

Now that I've given you an overview of ACTION! its time for you to run out and purchase your copy. If you have any questions at all about the language, please don't hesitate to call me at (703) 437-8652. Next month, we'll start with actual programming examples and demonstrations!

```
10 REM ****************************
20 DEG :GRAPHICS 8:COLOR 1:FOR X=0 TO
360:PLOT 160+50*COS(X),96+50*SIN(X):NE
XT X
40 REM This one-liner draws a circle.
   Try other graphic modes. Use your
   charts to change 160 and 96 for
50 REM centering the circle or oval.
   Change 50 for size. Try making
   some of the ovals into circles.
60 REM )
                Georgia Weatherhead
70 REM ****************************
```

BATTLE BYTES

by M. Evan Brooks

Battle for Normandy

BATTLE FOR NORMANDY (hereinafter referred to as Normandy or BFN) by SSI is a simulation of the D-Day invasion. In both complexity and historicity, it rates a solid intermediate level. When the individual is ready for a step into the complexities of simulation gaming, Normandy is a good stepping stone.

The graphics are adequate (translated from Apple into Atari, as are most SSI games). In fact, compared with more recent SSI efforts, the graphics are better than normal (cf. War in Russia, Objective: Kursk, Reforger '88).

But the game itself does an adequate job of simulating the campaign, while teaching some historical facts in an interesting fashion. As a solitaire game, the computer offers a tough opponent; do not expect to win big. In conversations with the SSI staff, this writer discovered that the historical outcome was a marginal victory -- and a German one at that! Simply put, the German has numerous advantages -- although severely outnumbered and undersupplied, his victory conditions are simply to deny the Allied player as much as possible. However, for the Allied player to win big, he must minimize losses and seize three (3) major objectives -- Cherbourg, St. Lo, and Caen. Historically, none of these were taken within the time frame of the game; in fact, the latter two did not fall until the beginning of Operation Cobra and Goodwood, respectively.

Be that as it may, the Allied player may still secure reasonable success and enjoy himself to boot. However, the instruction manual is barely adequate. After reading the manual, no one will be able to properly land the troops on the beaches.

Therefore, the key to success: when the Allied units cycle through for landing, the supply battalions show up first. UNDER NO CIRCUMSTANCES land a supply battalion. Allied units are supplied within three (3) hexes of a beach hex, and the Allies will not be moving outside of this range. Therefore, when the supply battalions show up for landing, pass them by. The Allies need combat units on the beach immediately; the logistical tail will catch up later.

In terms of historicity, the OB (order of battle) lists all units involved in the campaign, but it does not show which units landed on what beach and when. By utilizing the "West Point Atlas of American Wars" and the "Atlas of the Second World War", this writer was able to determine the proper time/beaches. All units down to the US 102nd Cav Reg landed in the initial landing; more detail is available from this writer. However, knowing the historical landing areas is not the key to success; better tactics may be achieved by modifying the landing order.

It is ESSENTIAL to land American units on American beaches, and British units on British beaches. A violation of this precept will waste supply and units. In determining the initial landing, make an effort to land two (2) armored divisions -- an American division (Utah beach) and a British division (Juno beach). Only armored divisions may move through zones of control; in order to destroy German units, it is mandatory to slide the armored divisions to the rear of the enemy in order to cut off their retreat. While this will lead to losses in Allied armor (being cut off behind enemy lines is not conducive to one's health), the German losses will more than make up for this.

The Utah beach units must move to Cherbourg as quickly as possible. The delay of one turn could prove fatal; victory conditions require seizure of key terrain, defined as not having an adjacent enemy unit, not merely the possession of the terrain. The British armor will be used in the center-right in order to move on Caen. The true historical problem facing the Allies will not exist; the Allies were concerned over how long it would take to link up the beaches; in the game, this link-up is automatic or nearly so (the Utah beach sector will usually not link up as readily, but it is not important to link up; Cherbourg is the key).

Besides tactical maneuver, the Allied player will face a bewildering choice of logistical problems. Allocation of supply among four areas is the key to survival; amphibious supply determines how many units may land the following turn; combat supply determines how many units may attack; general supply determines mere survivability (troops without food and clothing do not do overly well); fuel determines movement. Although the manual offers a suggested plan for the first few days, this writer does not recommend it once you have achieved a basic familiarity with the game. Only experience will allow you to make a proper allocation. Even then, the vagaries of the weather may destroy your best plans; if a storm hits early, the Allies may as well pack it in. A storm negates supply for the turn, usually leaving the units already landed on their own. It is better to have less than average weather spread throughout the campaign than to have it concentrated in a few storms. However, weather is random; historically, the storms did do severe damage to the Allied logistical efforts, but it was not fatal (e.g. PLUTO [pipeline-under-the-ocean] and other means were pressed into service). Stock up on general supply; when the weather turns bad, the general supply will allow the units to survive unharmed; it is depressing to see an entire army undergo massive casualties because of the deficit in general supply. But be warned; there is never enough supply to accomplish all your objectives; it is also depressing to have a surrounded enemy unit escape because your fuel has run out, or your combat supply has in effect negated your tactical plans. Experience will give you a better feel for the interrelationships of supply and tactical maneuver.

While the computer is an adequate opponent (and during your first play an unbeatable one), it does make certain predictable moves. A nice move is to land the Rangers and move them immediately towards St. Lo; if this

is done early enough, the Rangers will secure this site. They cannot clear it of enemy zones of control, and they will be mauled by German reinforcements, but their sacrifice will allow American units a needed respite to move out from Omaha Beach and possibly break through to St. Lo.

In maneuvering, NEVER allow a German unit access to a beachhead. Once a beachhead is lost, it may never be replaced; additional units must be constricted elsewhere. The loss of a beachhead is usually fatal; the loss of two beachheads would call for a general court martial of the Allied Commander. Use British armored brigades to secure their beachheads; they are not much good for anything else (they lack the division's ability to move through zones of control and they are too weak to offer sustained offensive maneuvers).

In landing, the Allies will have to fight the intrinsic strength of each beachhead until they have landed one hundred (100) points. Most units are halved in landing (it is difficult to fight in waist-deep water, and tanks are not the same as battleships or destroyers); special forces (commandos and rangers) retain their strength, since they were specifically trained for such missions. But when the Allies attack the beachhead, overkill will cause too many losses and too much fatigue among the Allied units; use a "4" to attack the beachheads. During the initial landing, make sure not to offer the German a cheap shot at any beachheads, and be ready to move out.

The game is one of maneuver and supply. Pay equal attention to both facets. Insure that units with heavy fatigue levels are moved out of the line for refitting (this means completely outside enemy zones of control). This move pays dividends; the Allies have enough units to afford this luxury. The Germans will have to keep all units engaged.

Overall, I would recommend this game. It is definitely a step-up from AFTER PEARL; its intimidating appearance may be offset by use of the strategic/tactical hints provided herein. Make sure to read and understand the victory conditions. As an aside, one of the units in the initial assault is the 29th Division; formerly a National Guard Division from Maryland-Virginia (the Blue and Gray), this division has been reactivated as a light infantry division and will be established within the next two years in the northern Virginia area.

While not the definitive combat simulation, I would rate this as a "must have". Its deficiencies in strategic history are made up by the tense combat and logistical interplay. The save option permits easy accessibility to the campaign game (which will last c. 8-10 hours).

Tips 'N Traps

Stevenson, Francese and Burke

Once again, we lurk through the murky waters of indecision as the new installment of Tips 'N' Traps unfolds. This month, we have a special feature: The Dallas Quest. This one has been a pain for many adventurers, and we've decided to enlighten you with our benevolent wisdom on the subject. This particular adventure was solved by one, Steve Francese, who is a semi-professional adventure solver who is now affiliated with this column. Once again, we ask for your kind help and support on the Adventure Q&A. We know that ARMUDIC has been down, and that no one was able to leave any messages, but we have had some when it was up. Keep those notes and letters coming. We need them to keep this article going. Thanks a lot!

And now,

Q. How do I get the shovel in the barn?

A. Usually, a cat gets rid of the common house pest. But in THIS case, it is a barn pest. A wild animal diserves to be eaten by another wild animal that LOVES the dark. GLASSes dismissed.

Q. Why does the parrot say, "Have a VINE time in the jungle"?

A. Don't worry about it. It has nothing to do with the adventure. It probably refers to the anaconda with a great sense of humor that was originally described as a vine.

Q. How can I get down the ladder in the post without breaking my neck?

A. Haven't you ever heard of not talking with your mouth full? This time don't climb with your hands full.

Q. What do I do when I reach the spider?

A. Make like a mother hen and keep the eggs warm.

Q. How do I get past the chief when he wants more from you?

A. Do not gaze upon yourself and be selfish, give to others.

Phone numbers: Jim Stevenson --------- (703)378-4093

Steve Francese -------- (703)830-2291

Alternate phone number:Barry Burke --- (703)830-1978

Call any of these numbers or ARMUDIC BBS if you know its new number, under the ADVENTURE Q&A message conference.

800 vs 800XL

by Allen H. Lerman

After having used an Atari 800 computer for over two years, I recently used an Atari 800XL for several days. I would like to summarize the differences (good, bad, and neutral) for those Atari veterans who have not had a similar opportunity.

The 800XL is smaller in all three dimensions, and its keyboard is closer to the table, I found the lower keyboard easier and less tiring to use. The 800XL keys are flatter, and its keyboard has a different feel. Not better or worse, just different.

The 800XL has no internal speaker. All sound comes through the TV or monitor. Thus, by turning down the TV volume, the 800's annoying keyclick can be eliminated. Hooray!!

The power, serial bus, TV, and monitor connections are on the back of the 800XL, thus reducing cable clutter. If the TV cable is not used, it can be removed. Joystick ports are on the side of the 800XL, so joysticks can be left attached without interfering with typing.

On the 800XL the cartridge is visible which reduces the chance of booting with a cartridge inadvertently left in the machine.

One troublesome change on the 800XL is the omission of the plastic shield surrounding the RESET key. As a result, I accidently pressed the RESET key instead of the OPTION key several times. Each time was a mini-disaster since the 800XL rebooted wiping out the spreadsheet I had keyed in.

The Translator disks supplied by Atari load in an 800 Operating System and allow virtually all programs written for the 800 to operate on the 800XL. Although the Translator is much-needed and welcome, it becomes tiresome to use. When a number of different chores have to be done in succession, the need for the Translator significantly decrease output.

It is nice to have built-in BASIC, but it is bothersome to have to depress and hold down OPTION each time you want the machine booted without BASIC.

The external power supply for the 800XL is twice as large as the one supplied with the 800. Nevertheless, it gets very hot during use. To avoid premature failure, a power strip should be used to disconnect the power supply unit when the computer is not in use.

The 800XL has only two joystick ports. Since I have never used more than two, I did not mind the decrease.

To my mind, the major defect in the 800XL as compared with the 800 is the omission of the separate chroma output. The 800 has three types of video output: TV; composite video; and separate luma (brightness) and chroma (color) outputs. The luma and chroma outputs can only be used on the relatively small number of monitors which have separate chroma and luma inputs, such as the Commodore-JVC 1702. However, when they are used, the image is significantly crisper and sharper, demarkation between colors is clearer, and text is far easier to read. The 800XL has the TV and composite video outputs, and it retains the luma output, so it is possible to obtain very sharp black and white images. However, without the chroma output, sharp color pictures are not possible. I assume that the chroma output was deleted as a matter of economics, especially since so few monitors can use it. Whatever the reason, the chroma output will be missed by those of us who could use it.

Overall, which machine would I rate higher? Quite frankly, I don't know. Obviously, I would pick the 800XL at $120 over the 800 at $500 or $600 or $700, but at the same price, the decision is not clear. Both are good machines, but each has some features the other is lacking. Your choice of machine would depend on your own evaluation of each machine's unique features.

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SYNFILE+ and Double-Density

By Jack Holtzhauer

Some of you may have been having difficulty using SYNFILE's double density capability because of a program glitch affecting INDUS and some PERCOM drives.

If you're like me, you've easily been able to switch to double density mode to format your data disk and then load the "CREATE" module to design your database. But once you've completed your form, you've been unable to SAVE it to your data disk -- consistent "device done" errors. In other words, the program successfully switches to double-density for formatting purposes, and back to single density to load the "CREATE" module, but fails to switch back to double-density to save your form.

I initially solved this problem by manually switching drive density thru manipulation of the "DRIVE TYPE" and "TRACK" buttons on my INDUS at the appropriate time. But that was hardly satisfactory, so I called SYNAPSE and was put in touch with David Duberman. Dave suggested using the following procedure. Try it! It works!

1) Boot-up in the usual manner.
2) Switch to double density from the LOAD/SAVE menu.
3) Format your data disk.
4) Without removing your data disk from the drive, select the OPEN command from the LOAD/SAVE menu and then select the CREATE function.
5) When prompted, remove the data disk and insert the program disk. The CREATE module will load.
6) Create your form and save it in the usual manner.

The key step in the above procedure is the requirement to leave your data disk in the drive until after you have selected the OPEN/CREATE functions and not to switch to your program disk until prompted to do so. This will cause the program to switch to single-density to load "CREATE" and back to double-density for saving purposes.

Atari Computers Junk?

[I thought you might be interested in the comment one C64 user sent to another C64 user who had bad-mouthed Atari Computers. Thanks go to the Atari Computer Club of Toledo for finding this gem on the Commodore SIG on CompuServe and reprinting it in their newsletter (Jan.1985). JW]

MAYBE YOU SHOULD TRY SOME OF THOSE COMPUTERS BEFORE RANTING LIKE THIS. I AM WRITING THIS ON A PC JR. NEXT TO IT IS MY TRUSTY OLD ATARI. AND OF COURSE, I HAVE WRITTEN "MAPPING THE 64" FOR COMPUTE BOOKS. HAVING PROFESSIONALLY PROGRAMMED ALL KINDS OF SYSTEMS, I THINK THAT A COMMODORE TYPE CALLING THE ATARI COMPUTERS JUNK IS QUITE LAUGHABLE.

(1) ATARI COMPUTERS WORK OUT OF THE BOX. I HAVE HAD EIGHT C-64'S SO FAR, IN ORDER TO GET TWO WORKING MODELS (SOME OF MY 64'S WERE SENT TO ME BY COMMODORE AS PART OF THEIR DEVELOPERS PROGRAM!)

(2) IF AN ATARI COMPUTER BREAKS, YOU CAN FIX IT! I MEAN ACTUALLY GETTING NEW PARTS, INSTEAD OF A WHOLE NEW COMPUTERS. IT CAN BE SERVICED QUICKLY LOCALLY.

(3) IT HAS A MUCH FASTER CLOCK SPEED THAN THE 64.

(4) ITS SCREEN OUTPUT IS 200 TIMES MORE LEGIBLE. IT ALSO HAS 16 SHADES OF 16 COLORS, WHICH ALLOWS MUCH BETTER CONTRAST ON ALL SORTS OF GRAPHICS PROGRAMS.

(5) IT HAS MORE GRAPHICS MODES, AND MORE FLEXIBILITY.

(6) IT FINALLY HAS A RELIABLE DISK DRIVE THAT WORKS MUCH FASTER THAN THE 1541. WITHOUT A RELIABLE DRIVE, NO MATTER WHAT SOFTWARE THE 64 HAS IS USELESS. CAN YOU IMAGINE SOMEBODY USING A 64 FOR ANYTHING CRITICAL, WITHOUT A LOT OF DISK DRIVE BACKUP?

I WROTE THE MAPPING BOOK ON MY ATARI WITH ATARIWRITER. THE MACHINE IS CHEAPER, MORE CAPABLE, MUCH MORE RELIABLE, ETC. THE BASIC IS BY FAR BETTER THAN THE COMMODORE ONE (ITS JUST A MATTER OF WHAT YOU ARE USED TO) AND FULLY SUPPORTS THE GRAPHICS, SOUND AND OPERATING SYSTEM. COME TO THINK OF IT, THE C-64 OS IS SO PRIMATIVE THAT IT DOES NOT EVEN SUPPORT AUTOBOOT DISKS. CALLING THE ATARI COMPUTERS 'JUNK' IS A LITTLE SILLY. IF YOU WANT TO SEE JUNK, GET ONE OF THE COMPUTERS THAT HAVE A 50% FAIL RATE, THAT WON'T RUN THEIR OWN CPM SOFTWARE, THAT CAN'T BE USED WITH A NORMAL TV SET. IN OTHERWORDS, LOOK DOWN AT THAT PIECE OF JUNK YOU ARE USING! P.S.: TO TOP IT OFF, ITS OVERPRISED TO BOOT!

GEM Software from DRI:
A Graphics User Interface to Many Personal Computers

[Thanks to the Digital Research SIG on Compuserve for the following details on GEM. Now that Atari has announced that the new 16-bit Atari line uses GEM, Atari readers may find the initial GEM product announcement more interesting than they did in November. JW]

MONTEREY, California, November 5, 1984 -- Digital Research announced today the Graphics Environment Manager (GEM) family of products, which brings a transparent user interface to users of personal computers such as the entire IBM PC line, AT&T personal computer, Tandy 2000, TI Professional and IBM-compatibles such as Compaq. In developing the GEM product line, Digital Research has taken the approach to user interfaces started with the Xerox Star computer and later standardized by the Apple Lisa and Macintosh computers.

GEM software, an operating system extension, initially brings a single-tasking graphics user interface to MS-DOS machines and Concurrent DOS machines operating in DOS mode. Because GEM software uses the Intel 8086 family of microprocessors, it is portable across a variety of machines and allows for future implementations on other operating systems and microprocessors.

Digital Research also announced its first GEM software application -- a desk-top metaphor called GEM Desktop that eliminates the need to use DOS commands. GEM software and applications based on GEM software are designed to make different kinds of computers and their programs accessible to inexperienced or casual users.

In a related announcement, Digital Research introduced today a series of end-user presentation graphic software packages aimed at the middle manager inexperienced in either computers or graphic design. These applications take advantage of the GEM software technology.

Software written for the GEM environment can include such features as overlapping windows, pull-down menus and icons, along with support for pointing devices such as a mouse. GEM software offers these features to any original equipment manufacturer (OEM) whose machines use the MS-DOS operating system. With GEM software's visually oriented user interface instead of the DOS text- and command-oriented one, even computer novices can quickly become comfortable with personal computers.

GEM software can be used on machines as small as the PCjr and the original Compaq portable, or lap-size machines such as Data General's Desktop/One. And despite the addition of GEM software to a machine's operating system, all existing software applications will continue to execute without modification or change in performance. Under MS-DOS, only one application is in memory at any one time.

GEM: A Software Operating System Extension

GEM software can run on any MS-DOS based or Concurrent DOS-based machine, once the small amount of software code that controls the graphics screen display and pointing device has been written. An extension to MS-DOS, GEM is an application programming interface with windowing capabilities, data interchange facilities, complete graphics device support and user interface primitives -- such as pull-down menus and icons -- while retaining the ability to execute all existing applications.

The GEM technology builds on Digital Research's first graphics system extension, called GSX, which was introduced in 1982. GEM software was designed to incorporate the latest developments in graphics hardware and in applications environments.

"The objective of Digital Research is to provide computer graphics technology for the mainstream personal computer such as the IBM PC, TI Professional and Tandy 2000. Because people find it easier to interact with a computer in a visual manner, GEM software will effectively open up the personal computer market to those people who are deterred from using a personal computer because of the necessity to learn complicated commands," said John Rowley, president of Digital Research. "This product could expand our OEM's markets by millions of users."

Both the graphics standard embraced by IBM -- the ANSI VDI -- and Macintosh applications environment capabilities are built into the GEM software system. This ensures both that existing IBM VDI packages for engineers and scientist can run on GEM, and that future applications for general use can have high speed graphics.

GEM Desktop Software: A Graphics Application

When a personal computer user first turns on the machine, an "A>" symbol appears on the screen. The computer awaits instructions, which the user may or may not know. But when the same user first turns on a computer equipped with the GEM Desktop application, what first appears on the screen is a graphical representation of a desk top. Familiar-looking graphic representations of disks and a trash can appear on the desk top, while folders and documents appear in the user-controlled windows. Simply by moving the mouse and clicking the mouse button, the user can open a file, run a software program, delete a file or do anything else possible under the operating system.

OEMs will find the GEM Desktop application valuable because its icons and text can be easily edited to fit the needs of a variety of vertical or foreign markets. Up to six desk accessories can be included with the GEM Desktop

application: a clock, calculator and space for four other programs such as a note pad or card file.

Application programs witten for GEM software do not require the GEM Desktop application; however, without it, the user needs to know MS-DOS commands to gain access to the programs. The GEM Desktop application steps aside as soon as any other application is started.

Hardware Requirements and Availability

GEM software runs on the MS-DOS Version 2 or 3 operating system or the Concurrent DOS Version 3.2.1 operating in DOS mode. It requires a bit-mapped graphics display, a mouse and two floppy-disk drives. Together, GEM software and MS-DOS occupy fever than 128 kilobytes of memory. GEM Desktop application requires GEM and at least 80 kilobytes of memory.

GEM software and the GEM Desktop application will be available during the first quarter of 1985. Digital Research will deliver multi-tasking implementations for Concurrent DOS later in 1985.

Digital Research Inc. provides system software and software-related products for the full spectrum of microcomputers in business, professional and commercial markets.

GEM Software Availability Announced

January 22, 1985. Public availability of the GEM Programmer's Toolkit product has been formally scheduled. The first physical products will be shipped to GPS subscribers from DRI manufacturing on March 25, 1985.

Nine Independent Software Vendors Publicly Committed to GEM

A growing number of software vendors are committing engineering resources to develop GEM applications. Those publicly announced are:

Blue Chip - Millionaire, Baron and Tycoon finance simulation software will take on a GEM look

Chang Labs - wrote Graphplan with DRI's GSX, and now ready to offer the popular Rags to Riches accounting series with GEM

Hayden - prolific publisher of numerous Macintosh titles, including the DaVinci series, Musicworks, Sargon and Haydenbase

Lifetree - preparing a GEM version of the Softsel Hotlist word processor Volkswriter

Matrix - just announced at CES the Infinity integrated package for 8-bit Atari machines, and will release a GEM version for Atari's ST

Quadratron - major name in UNIX word processing will go to a GEM version under DOS

Schoenburg & Hoxie - two men who launched the Home Accountant and Context MBA are now teaming together to design GEM applications

Spinnaker - the renowned publisher of educational and entertainment software will use GEM for a new product line

Thorn EMI - the British electronics giant's new US software group, first acquired Perfect Software, now readies to create a GEM line

Other software vendors already committed to GEM will go public in the near future. Many Softsel Hotlist companies are actively interested in GEM and have signed up for the "Introduction to GEM Programming" seminar.

ATARI GEM Sparkles at CES; ACT and COMMODORE Announce GEM Support

Atari Corporation unveiled its new line of ST microcomputers to rave reviews at the Consumer Electronics Show in Las Vegas on January 5. These micros feature a Motorola 68000 processor, 640x400 monochrome resolution capability, a 512 color palette for color modes, and up to 512K memory capacity at introduction. DRI announced it provided Atari both the GEM software and the new proprietary operating system, TOS, as well as a GEM version of the Logo language. GEM and TOS will be in ROM on all Atari STs. Independent software vendors developing GEM applications under DOS will have a minimal porting task to support the Atari ST.

Britain's largest personal computer OEM, ACT, had already endorsed GEM at Fall COMDEX '84. ACT will distribute MS-DOS GEM and the Desktop with its full line of Apricot micros in Europe and North America. ACT will use the former Apple distribution network for an aggressive product launch in North America.

Also at CES, Commodore announced its contract for GEM and the Desktop targeted for the new Commodore PC, an 8088-based MS-DOS IBM-compatible. This microcomputer will be introduced in Europe.

These commitments to GEM from three major microcomputer vendors are an exciting indication of things to come. Digital Research's goal of one million installed units of GEM by the end of 1985 is on target.

DRI's GEM products for MS-DOS OEMs are right on schedule for final release to customers by the end of February. Availability of GEM on specific hardware will vary according to OEM schedules. DRI's on-time shipment and Atari's projected second quarter ship of STs suggests the market for GEM applications will explode up by mid-year.

GAMEVIEWS

by Roland Gabeler

This month we will review a few public domain games available from NOVATARI on Games Disk #5 (**Parlor Games**). You can find most of these games in the libraries of other clubs as well. I will also review **Star Trek** by Sega. Both of these selections are bargain priced; the NOVATARI disk at $3.00, and **Star Trek** $4.97.

Game disk #5 includes brief instructions for each of seven games. If you have been playing these parlor games in their board or card editions, the brief instructions are all you'll most likely need to refresh your memory. If, however, you have never played the game, the instructions will barely suffice. You may be able to wing it a few games and get a basic understanding while losing to the computer. Each game has undergone some changes to adapt it for the computer. You should bear in mind, since these are public domain, the computer may not employ championship playng skills, and multiple levels of difficulty. It may simply beat you because it knows details of the rules better than you do. I will not attempt to define the rules to these games in this column, but rather the objective, how well the translation to computer compares to the original, and their entertainment value for the money spent.

The game of **Othello** (or Reversi) requires opponents to outflank each other, thereby changing the "surrounded" pieces to the attacker's color. The colors are different from the original board games, but pleasant. The board grid changes to the color of the player who's turn it is to play. The computer plays a competitive game but was beatable on the first attempt by a mediocre player. The computer keeps score under the player's color, but, this should be ignored for two reasons. First, the count was wrong, and second, the game changes dramatically and the lead, you thought was sizeable, will vanish in a single well placed move. Basicly, this version is true to the board version and of course all computer versions flip (change) colors for you automaticly. That is a major benefit, as it is very laborious in the board version.

The game of **Battleship**, while not a graphic delight, suffices to replicate the board (or original paper) version. This is a game of strategy wherein the opponents place ships on a grid hidden from one another, and attempt to sink each other's fleet through plotting locations of shots fired in relation to results reported. This simple computer version lacks any charisma in design, but plays well.

Monopoly, celebrating it's fiftieth year in 1985, is attractively recreated in this computer version. A real estate buying game in which you charge rent to visitors and attempt to bankrupt your opponent through schrewd buying decisions. This version, however, does not allow the purchase of houses and hotels to improve the value of the property. This simplifies the game but detracts from the gameplay strategy. This is a pleseant version, but not for the Monopoly purest. Let's hope Parker Brothers decides to release their Atari computer version in 1985. They promised it in 1982 at the Consumer Electronics Show, but have never released it. What better way to celebrate their anniversary!

The card game **Mille Bornes** is another graphic disappointment, but I admit, I'm spoiled, and after all, these are public domain games. This French card game features racing cars driving across country attempting to arrive at 700 (or 1000) miles before your opponent. You may use several cards to impede your opponent's progress, while trying to avoid same. This game is pretty well done, but suffers mightily from lack of adequate documentation. This documentation cannot be provided in the detail necessary (Parker Brothers provides 29 pages), so you'll have to guess at some of the rules while the computer plays a pretty fair game. If you stick it out for a few games you'll probably catch on to what the computer is doing to you and learn how to win this game.

Yahtzee, for up to four players, is fairly well reproduced in this version. This game is a dice version of accumulating poker style groups of die blips (full house, straight, three of a kind, etc.) to acheive a higher point total than your oponent(s). This simple game is fun but requires more strategy than may be evident at first glance. This is a nice game to play on the computer for one or two people, but I can't imagine four people gathered around the console to play a dice game.

Simon is the simple memory retention color sequence game that swept the country in the form of a light box a few years ago. The computer version has very simple graphics with four color squares that flash in sequence. Your job is to replicate the pattern by pushing a joystick in the same pattern. This is interesting, but not enduring play mechanics, as there is no strategy, simply memory. Since my memory is not that great, I got bored after three sessions. I think part of the appeal of the original light box version, was the quick physical moves to tap the color squares.

The **solitaire** game is very well done, even the graphics!! I'm sure, by now, you figured no public domain game could please me in graphics. But, this game shows how well they can be done. The game requires you to collect suits of cards through careful selection of sequential stacking. This version allows you to go through the deck one time. If you like solitaire, I think you'll love this version.

The Games Disk #5 is an outstanding value for $3.00. It has already paid for itself in my collection several times over. The parlor style games are a nice change of pace from arcade or strategy computer games. These games require a little thought but in a relaxing kind of way, sort of like playing solitaire on a rainy day, fun, but not intense.

Star Trek, by Sega, has been reduced in price for a couple of months in the Atari computer version. Down to about $4.97 from $39.95 a year ago. This is a rotate, slide and shoot (Asteroids) style game using three windows. The screen is divided into views of your location (overhead), your view out your flight deck window, and

your instuments and score status. The box graphics are, to coin a phrase "2600ish", and would lead you to believe the game has course blocky graphics. This is not the case, the graphics are not only finely detailed, but the pictures, in three-D perspective, of the Klingon battle-cruisers are beautifully shaded. In the top right third of the screen, you locate the enemy klingons in your sector. As you use a joystick to position yourself close enough, you can view the klingon in your lower third, flight deck, window. This window includes a gunsight and as you press your trigger to fire, you may watch the graphic explosion of the klingon. Also, in the overhead view are two or more of your bases (the klingons are attacking). You may dock with one if you need damage repairs. The upper left screen dispays your score, your shield, photon, and warp status. Your objective is to secure the sector by destroying the klingons. As this is accomplished, you are wisked away to the next sector. After two sectors, you are treated to a maneuvering exercise of avoiding first asteroids and later comets while trying to dock several times with bases for repairs. After two additional sectors, you are in a special sector with a fast flitting Nomad command ship. If you can rotate, slide and shoot fast enough, you'll destroy the Nomad. The reward is a screen of the "Rollong Rainbow effect" and promotion to the next level of difficulty.

While I am not an Asteroids fan, I found this game to be entertaining for a while. The attractive graphics and effects kept my attention longer than had they not been so good. I received my $5 worth, but never would have gotten $40 worth. I recommend it, if you like slide, shoot and rotate style games.

Lastly, where can you find more and more new games for Atari on the shelves? In the Commodore 64 area!! The trend of putting Atari on one side of a disk and Commodore 64 on the other is spreading. This is very fortunate for Atari users and retail merchants . If not for this new packaging, we may not have had Atari versions for some of these games. Parker Brothers (**Montezuma's Revenge**), First Star (**Spy vs Spy**), Sumcom (**PQ**), Screenplay (Ken Uston's **Blackjack, Kaiv**), Avalon Hill (**Football**), Penguin (**Transylvania**), and Synapse (**relax**), are a few I have noticed recently. So, be sure and look for them when shopping for a new game.

Next month, another public domain disk and First Star's **Spy vs Spy**. If you need more details on rules for the above reviewed public domain games call me at (703) 620-9142, I would be happy to explain the rules in detail.

Musical Notes

By Jay Gerber

Hello music enthusiasts and electronic musicians, and welcome back to Musical Notes, the column that helps you make beautiful music with your Atari. Before we start getting down to the basics of music theory, let's review some of the key terms that we have learned over the last several columns.

For those of you who are just joining us, the following glossary should help you to keep up with us now. For those of you who have read and kept up with Musical Notes, this should be a handy reference guide to glance at while reading future columns.

Music Theory Basic Terms

SOUND - a result of a set of vibrations hitting your eardrum and being translated by your brain. When anything vibrates, it creates a sound. The human ear can pick up any sound that falls within the 20 to 20000 vibration-per-second (Hertz) range.

NOTE - a sound that falls within the set patterns of tones known as the musical spectrum.

DURATION - the amount of time a certain note is played. Common durations are whole, half, quarter, eighth, sixteenth, and thirty-second. An average whole note is carried out for about two seconds.

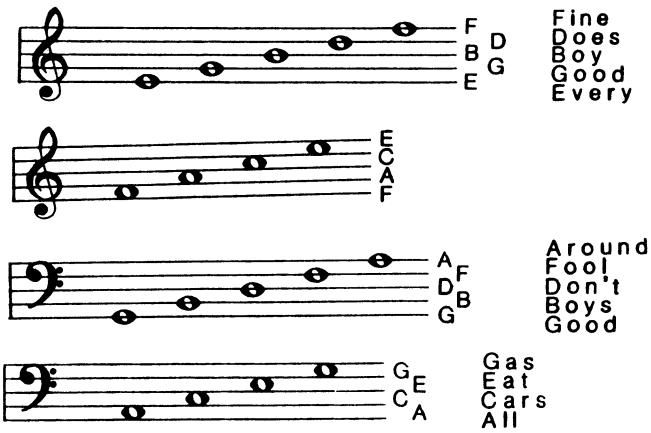
MUSIC - a sequence of notes that when played sounds pleasing to the human ear.

MUSICAL SPECTRUM - a set of tones (notes) that is based upon tonal patterns originating at 'Middle C' (4096 Hz) and going lower or higher at set intervals. The names of the notes are: C, D, E, F, G, A and B. Figure 1 shows the arrangement upon the staves.

SHARP(#) - when placed on a line or space of the staff, it says to raise the pitch of that note one half-step.

FLAT(b) - when placed on a line or space of the staff, it says to lower the pitch of that note by one half-step.

TREBLE STAFF - a set of five lines above 'Middle C' that contain most of the frequently used notes higher-pitched than Middle C.



BASS STAFF - a set of five lines below Middle C that contain most frequently used notes lower-pitched than Middle C. See figure 1.

OCTAVE - all the notes between and including two notes of the same name. Playing one note in two octaves reveals that they sound somehow similiar, but are different pitches.

KEY SIGNATURE - The 'key' the piece is written in. This column has not yet covered chords or 'keys' yet, so suffice it to say that the key signature is a group of sharps or flats which are to be observed throughout the piece of music, unless the 'key' is changed by another signature appearing later in the piece. The key signature will only occur immediately after the bass and treble clefs and before the first measure of music to be played.

TIME SIGNATURE - A set of two numbers, one atop another, just after the key signature. The top number represents how many counts in a measure, and the bottom tells which note gets one count. For example, the time signature 4/4 this means that there are four counts in a measure, with a quarter note getting one count. Four quarter notes or eight eighth notes or one half note plus one quarter note plus two eighth notes would all fit within one measure in this time signature.

MEASURE - a division of music that contains all the durations that will fit within the time signature's boundaries. In the figure above, if the first four notes were quarter notes, then there would be two vertical bars seperating that set of notes from the next measure, containing the exact same amount of note durations.

TIE - a small curve placed above and between two notes. It signifies that they are to be played, duration-wise, as one note. For example, two Middle C quarter notes that have a tie would be played as one half note.

DOT - a small dot placed immediatley after a note that signifies to play that note one-and-a-half times its normal value. A dotted half note would be played three counts (in 4/4 time) rather than the usual two of a half note.

Although this is far from a complete list, it should help you to keep up with the terms being presented in future columns. Next month I will discuss chord theories, and how they can make your one-voice programs sound better.

*** ANNOUNCING SOMETHING NEW ***

There will be a regular help column in Musical Notes so that you readers who have any questions about how to operate any of the commercial music packages like Music Composer, Music Construction Set, Advanced Music System, and BankStreet MusicWriter. Or if you want to put music or sound effects in your Basic, Action, or Assembly programs and need help, just write me at: Jay Gerber, 3639 N. 36th Road, Arlington, Va. 22207 (703) 525-9715. Alternatively, if you have a modem, you can send me messages through ARMUDIC, the club's BBS.

ATARI SCUTTLEBITS

By Bob Kelly

I ended last month's soliloquy on Atari's marketing strategy by stating that the March column would provide some insights as to how Atari may best market its new line of computers. In other words, what existing advantages does Atari possess and how should it capitalize upon them. In the intervening month a more immediate issue confronted me as it will others who own Atari computers. Thus, the scheduled topic will be deferred until next month.

Can you guess the cause for the switch in topics? Yes, it is tax time. Did you realize that the Federal tax laws governing the purchasing of personal computers changed in 1984? Well, if you didn't, you should read the first portion of this column carefully. If you have not been using your Atari PC to assist in the preparation of your taxes, the second half of this column will tell you about some programs that may be of help. I have been using one of these programs for three years and will conclude with a short review of this tax program as well as indicate areas where it may be enhanced/improved.

Federal Tax Law Changes

First, if your Atari is for only games, forget it... you can't even deduct the postage to mail in your warranty! Skip to the second section and look at tax programs that may help you save time and/or money in other ways. Assuming you do use your Atari PC for business purposes, the new tax laws as contrasted against the old tax provisions are described below.

For home computers purchased prior to June 18, 1984 and used primarily for business, the percentage used for business qualifies for the investment tax credit, the immediate expensing provision where up to $5,000 is available, or fast depreciation over five years under the accelerated cost recovery system - if expensing is undesirable. You can mix and match among the three provisions to some extent. My only advice is that the immediate expensing provisions are generally most favorable to those whose tax brackets are greater than 42% while the maximum investment tax credit (10%) is most favorable for taxpayers in the lower brackets (<35%).

If you bought your home computer after June 18, the rules are a lot more stringent. You must now document use every time you power-up (computer logs will be the rage this year). In the past if you brought work home and used your computer, it could be considered as business use and deductible. Under the new rules the cost of an employee-owned Atari or any personal computer can only be deducted if the computer is a necessary condition of employment or used exclusively on the employer's premises. Further, the computer must be used more than 50% of the time for business -- tax records, investments, rental property, and continuing education use is no longer business use and will not count as time toward the 50% business portion. If business use is less than 50%, then the tax credit, depreciation and immediate expense provisions do not apply. Your deduction is limited to straight line depreciation over 12 years on the business portion of the computer's cost.

Here's a real kicker... Suppose your home business usage exceeds 50% for the first year, you can use the expensing, tax credit, and depreciation provisions to obtain the maximum benefit. Assuming then your business usage drops below 50% (in year two or any future year), the benefits taken in the first year now have to be repaid. This is not a typo nor a time warp! All of the investment tax credit must be repaid in the year the drop below 50% business use occurred, and all the depreciation in excess of the straight line amount has to be added back to taxable income. This is true even if usage exceeds 50% in all subsequent years. Note, even if you are self-employed, the 50% test must be met. Naturally, the 50% test does not apply to use in a business establishment. Once again, the home computer/small business user gets it stuck to him. Want to lobby Congress?

Tax Preparation & Planning

There are several tax planning and preparation programs for the Atari. The most interesting and often cited are:

1. Tax Planning:

- **Tax Command Planner** - list price $25.00. Practical Programs, P. O. Box 93104, Milwaukee, Wi. 53203, (414) 278-0829.

2. Tax Preparation:

- **Swiftax** - list price $50.00. Forms A, B, C, D, G, W, SE, 1040, 1040A, 1040EZ. Timeworks, 444 Lake Cook Road, Deerfield, Il. 60015, (800) 323-9755

- **Tax Manager** - list price $75.00. Forms A, B, C, D, E, F, G, SE, W, R, 1040, 1040EZ, 1040ES, 2106, 2119, 2210, 2441, 3468, 3903, 4797, 5695, 6251. Micro Lab, 2699 Skokie Valley Road, Highland Park, Il. 60035, (312) 433-7550.

- **Tax Advantage** - list price $70.00. Forms A, B, C, D, E, G, SE, W, 1040, 6251, 2106, 2441, 4562. Continental Software, 11223 South Hindry Ave., Los Angeles, Ca. 90045, (213) 417-3003 (support services), (213) 410-3977 (business offices).

- **SynCalc & Antic Templates** - list price $15.00 for Templates; $65.00 for SynCalc + Templates. Forms A, B, C, D, E, G, SE, W, 2106, 2441. Antic, 524 Second St., San Francisco, Ca. 94107, (800) 227-1617 ext. 133.

Of course, if you have the ATR-8000 with the CP/M add-on, your tax planning/preparation software options are significantly increased not only in numbers (5 to 10 additional major programs) but also in terms of professional quality (see: Creative Computing - March,1985 for more details).

For the past three years I have used the **Tax Advantage** by Continental Software. I have found this program

to be a quality product and recommend it to Atari PC users. Each year Continental has improved the program, with the most significant changes occurring last year (1983). For 1984, the primary change is that all forms, except the 1040, can be printed directly for submission to the IRS. The program is very easy to use and the documentation is more than adequate. InfoWorld rated this program excellent in three categories and above average in the remaining two (February 4, 1985). I do not intend to rehash what essentially can be found by reading the InfoWorld review. One item not mentioned in their review was that the Atari version is protected on side A. This does not bother me. What does bother me, greatly, is that once the protected menu loads, the program must constantly recycle through the protection on track $40 (to print forms, etc.) adding a significant delay to operation of the program. This recycling should be eliminated and is frankly bad programming technique.

The program has a few further flaws, not serious faults, which I will list in the hopes that Continental will correct them by next year. Specifically, they are:

1. If you use Schedule C and form 4562 (depreciation) which are included with the program, don't you think most people would also need the Investment Tax Credit (ITC) form? Of course they would and you guessed it ... Form 3468 for the ITC is not included.

2. The Residential Energy Tax Credit, form 5695, should be included in the 1985 version. Both this form and 3468 are commonly used by those individuals who purchase these types of tax programs (middle to upper level income groups).

3. If the program is to be protected again in 1985, have two copies of the program in the original box. Don't request the submission of the warranty card before sending the back-up disk. I have already submitted my Federal taxes and still have not received my back-up disk. You want me to really tell you what to do with that disk now - Continental!!

4. The capability to delete entire schedules should be an option within the program. As it now stands, if you choose the automatic print all forms option, as opposed to printing form by form, the program will print all forms the user referenced. For example, you may fill in Schedule A and as a result determine that your total deductions are insufficient to use this form. However, your unwanted Schedule A will still be printed if you select the print all forms option.

Finally, has anyone out there used **The Tax Manager** by Micro Lab? It looks very interesting. It has both forms 5695 (energy credit) and 3468 (ITC) but it does not have, according to the write-up, 4562 (depreciation). This is curious, to say the least - it must be a mistake. Drop me a line if you have used this program and I will publish comments in the April column.

A Follow-Up Report From ATARI

by Terry White

A lot of questions have surfaced concerning the new Atari computers since their introduction in early January.

I asked Brian Kerr (Marketing Manager and User Group Liason at Atari) some of these questions and below are listed some answers:

* Some major chains carrying Atari will be K-Mart, Sears, and Toys-R-Us. Also, new distributors have been signed up.

* The new machines are still on schedule. Atari is expecting a rush on their new models, thereby creating pocket shortages. Hopefully, by July the production quotas will be met to clear up these shortages.

* Atari's new 5 1/4 inch disk drive (replacing the 1050) will not be a true double-density drive. However, Atari is working to resolve issues of compatibility between DOS 2.0S and DOS 3.0.

* The parallel bus on the 800XL will not be available on the 65XE. But, it will be available on the 130XE in an enhanced version to clear up minor deficiencies. A cabling difference is all that is expected.

* Documentation on the XL line is available by calling the Atari Customer Service Line (OS listing, manuals, etc.).

* On the "ST" line, GEM and BASIC will be in ROM. LOGO will be available on specifically designated machines in ROM also.

CLASSIFIED ADS

Centronics 739 Printer with Proportional spacing and graphics. Also includes TOF command & reverse platten rotation for special applications. Mobius loop ribbon for extended printing. Original cost was $525, sacrifice at $200 with cable from 850 interface to printer and graphic software. See Bruce at the meeting or drop a line to the AURA PO box 7761 in Silver Spring, MD 20907. If you want to call, try after 10pm at 587-7890.

For Sale: Disk drive. PERCOM Model AT 88S1PD (includes printer port), $175. Call Leonard at 437-4054.

For Sale: PERCOM AT88S1PD disk drive: true single/double density; parallel printer interface with cables; slave drive capability; < 2 year old. Also have double-sided, double density slave drive available (TEAC). Asking $250 for master, $200 for slave drive. Terry White, 560-2010 (weekdays) or contact at NOVATARI meetings.

Classified ads are free to members of the Washington Area ACE. Call Joe Waters, 430-1215 (H) or 450-6015 (W) prior to 15th day of the preceeding month.

Disk Operating Systems: Part I -- ATARI DOS 2.0

by Joe Waters

If you are a relatively new Atari disk drive owner, you have received DOS 3.0 with your purchase of an Atari 1050 disk drive. However, many Atari products, old APX software, public domain disks, etc. come with DOS 2.0. You have documentation for DOS 3.0, but not for DOS 2.0. Two problems now confront you: Which DOS to use? and How does DOS 2.0 work?

My advice is to forget DOS 3 and use DOS 2. As for the documentation, there are many excellent reference books on the market which will explain DOS 2. Your Atari Computer by Lon Poole (Osborne/McGraw Hill) is one of the better ones.

However, until you have time to get a complete reference, you still need to know how to accomplish some basic operations using DOS 2.0. Here then is a short cook-book of recipes for accomplishing some of the more common DOS-related tasks.

BOOT DOS DISK. The first thing you need to do, of course, is turn on your computer when a disk with DOS 2.0 is in the disk drive. If you do not have BASIC in, the DOS menu appears. (If you see the Ready prompt, type "DOS" to go to the DOS menu).

```
DISK OPERATING SYSTEM II VERSION 2.0S
COPYRIGHT 1980 ATARI

A. DISK DIRECTORY I. FORMAT DISK
B. RUN CARTRIDGE  J. DUPLICATE DISK
C. COPY FILE      K. BINARY SAVE
D. DELETE FILE(S) L. BINARY LOAD
E. RENAME FILE    M. RUN AT ADDRESS
F. LOCK FILE      N. CREATE MEM.SAV
G. UNLOCK FILE    O. DUPLICATE FILE
H. WRITE DOS FILES
```

There are 15 options in the menu (A-O). To select a particular option, press the letter of the option you want and then press RETURN.

FORMAT DISK. Before you can use a new disk for anything, it must be formatted. This operation entails filling the disk with zeros and writing out the disk directory. Choose option I. The computer will ask you:

```
WHICH DRIVE TO FORMAT?
```

Respond with the disk drive number. If you have a single drive, enter "1" and press RETURN. Since formatting a disk completely erases anything that may have been on it, the computer asks you to verify your choice:

```
TYPE "Y" TO FORMAT DISK 1
```

Enter "Y" and press RETURN. Your disk will now be formatted.

When the fomat process is comlete, you will see the message "SELECT ITEM OR RETURN FOR MENU." You may select another menu item now. If you simply press RETURN, the menu is displayed again.

WRITE DOS FILES. The Atari does not have a Disk Operating System (DOS) in read only memory (ROM). To use a disk drive, a DOS must be placed into the Atari's memory when the computer is turned on. If your disk has DOS.SYS on it, the disk operating system is automatically loaded into memory when you start. (If your disk does not have a DOS.SYS, you will see "BOOT ERROR" repeated continuously.)

To put the Atari DOS 2.0 system files on your disk, choose option H. The computer will ask:

```
DRIVE TO WRITE DOS FILES TO?
```

Respond with the appropriate drive number and press RETURN. Once more the computer will ask you to verify your choice by asking:

```
TYPE 'Y' TO WRITE DOS FILES TO DRIVE 1
```

Press "Y" and RETURN. The computer will respond:

```
WRITING NEW DOS FILES
```

DISK DIRECTORY. The most common thing you do with the disk operating system is find out what files are on the disk. You do this by looking at the disk directory. It will list the file name, the file extension (if one is used), and the size of the file measured in "sectors" (a formatted disk has 707 sectors available for your fies).

Choose option A to look at the disk directory. The computer responds:

```
DIRECTORY--SEARCH SPEC,LIST FILE?
```

This message is usually unintelligible to new users. You can simply ignore it and press RETURN. The system will them immediately list your files followed by a message telling you how many "FREE SECTORS" are left on the disk.

If you are looking at the disk you just formatted, you will see two files listed, DOS.SYS (39 sectors long) and DUP.SYS (42 sectors). These two files were written to your disk when you choose option H. The first one, DOS.SYS, must be on your disk if you want it to boot up. This allows you to use BASIC and SAVE/LOAD or LIST/ENTER files to and from your disk drive. The second one, DUP.SYS (which stands for Disk Utility Programs), is the one which displays the menu and lets you perform various operations on you disk files.

The DISK DIRECTORY prompt we ignored earlier by simply pressing RETURN is actually quite powerful. In effect it is asking you what files you want listed (SEARCH SPEC) and where you want the compter to list them (LIST FILE). If you do not say otherwise, the computer assumes you want all files listed on the screen. If you only wanted a listing of your files that had a file extension

of "BAS", you could have responded "*.BAS" and only files that ended in ".BAS" would have been listed (to the screen). If you wanted to list every file on the printer, you could have responded "*.*,P:". However, most of the time, you will accept the default assumptions and just press RETURN.

RUN CARTRIDGE. To go back to BASIC (or whatever cartridge you have in the machine), choose option B.

When you are in BASIC and want to return to DOS, type the BASIC command "DOS" and the "DUP.SYS" program will be loaded into memory and then the DOS menu will be displayed. Be sure to save your BASIC program before going to DOS since DUP.SYS loads into memory where your BASIC program is stored.

COPY FILE. Option C is used to copy files. If you choose option C, the computer responds:

COPY--FROM,TO?

It is looking for information on what you want to copy and where you want the copy put. If you wanted to make a copy a file called "TEST" and name the copy "TEST2", you would respond "TEST,TEST2". Note: you cannot copy a file to another disk using this option unless you have more than one disk drive. If you did, you would respond, "D1:TEST,D2:TEST2". If you have only one drive, you will have to use option "O" DUPLICATE FILE below to move a file to another disk.

This command, like DISK DIRECTORY, is very general. If you had responded "TEST,P:", the file TEST would have been copied to the Printer. "TEST,E:" would send the file TEST to the Editor (screen). For this to work, "TEST" should be a text file and not a SAVEd BASIC program. To create a text file, COPY from the Editor to a disk file. For example, respond to the copy prompt with "E:,D1:TEST". The disk drive will make a little noise and the cursor will just move down to the next line. Type in anything you want. Every line you type is sent to a disk file called "TEST". When you are done typing, press CONTROL plus the number 3. CONTROL+3 is the code for the End Of File (EOF) and it says your input file is finished. If you look at your directory, you will now see listed a file called TEST. Try "Copying" this file to the editor as explained above. You should see everything you just typed on the screen.

DELETE FILE. Option "D" is used to remove a file from a disk. To delete the TEST file you just created above, enter D and RETURN. The computer responds:

DELETE FILE SPEC

Enter "TEST". The computer responds:

TYPE 'Y' to DELETE...
D1:TEST. ?

Enter "Y" and the file will be deleted.

Once again, when the computer asks for "FILE SPEC", several options are available. Suppose you had a dozen different files on your disk that all had the extension ".BAS" and you wanted to delete half of them. Rather than entering each file name one-by-one, you could respond to the delete prompt with "*.BAS". This says to delete all files that end with ".BAS". The computer will look through the disk directory and show you the name of each file it finds that meets the search specifications. You respond "Y" to delete the file. Any other response and the file will not be deleted. Needless to say, you should be somewhat careful in using wildcards characters (*) and (?) when doing deletions.

RENAMING A FILE. Sometimes you may want to change the name of a file. Use option "E". The computer asks:

RENAME - GIVE OLD NAME,NEW

To change the name of our TEST file to JUNK, respond with "TEST,JUNK". The name will be changed. Use option "A" to verify. If the file you wanted to change was on drive 2, you would respond "D2:TEST,JUNK". Note that you do not repeat the drive specification for the new name.

PROTECTING FILES. If you want to protect a file from acgidentally being changed or erased, you can use option "F" to LOCK your file. Files that are locked are listed with an asterisk in front of their name. Protect your two system files by choosing option "F". The computer asks: WHAT FILE TO LOCK? Respond with "*.SYS". Use option "A" to verify that DOS.SYS and DUP.SYS are "locked".

UNPROTECTING FILES. This is the opposite of protecting. It unlocks a locked file and removes the "asterisk" in the file listing.

DUPLICATING A DISK. To copy an entire disk, choose option "J". The computer responds:

DUP DISK--SOURCE,DEST DRIVES?

"SOURCE" refers to the drive that has the disk you want to copy. "DEST" refers to the destination drive--where you want the copy to go. If you have a two-drive system you might respond "1,2" or "2,1". Be sure you have your source and destination correct so that you do not find yourself copying a blank disk to your "source" disk.

If you have a one drive system, your response will always be "1,1" -- from drive 1 to drive 1. In this case, the computer will respond:

INSERT SOURCE DISK,TYPE RETURN

Put in your source disk now and press the RETURN key. The computer will start transferring data from the disk to your computers free memory. When memory gets full, the computer asks you to:

INSERT DESTINATION DISK,TYPE RETURN

Take out your source disk and put in your destination disk -- check it, make sure it is the destination disk -- and

then press RETURN. The data in the computer's memory will be then transferred to the destination disk. This process will repeat until everything from the source disk is transferred to the destination disk.

DUPLICATING A FILE. If you want to copy a file from one disk to another disk, use option "O". The rest of the steps are illustrated below:

```
NAME OF FILE TO MOVE?
TEST1.BAS  <-- Your response here.
INSERT SOURCE DISK,TYPE RETURN
           <-- Press RETURN key.
INSERT DESTINATION DISK,TYPE RETURN
           <-- Press RETURN key again.
```

There are several other options on the DOS menu. Beginners are not likely to ever need "BINARY SAVE" or "RUN AT ADDRESS". If you have a file on your disk that is a binary file (the extension might be listed as ".BIN" or ".OBJ" or ".COM" or ".EXE" or it might not have an extension), you need to use option "L" to load the file. The computer will ask:

```
LOAD FROM WHAT FILE?
```

Enter the filename. If this is a binary file, it will load and begin executing. If it is not, the computer will simply respond "BAD LOAD FILE". Note that many binary files will not run if BASIC is installed in the computer's memory. For old machines, take out the BASIC cartridge. For XL machines, press OPTION when turning on the computer.

The final menu option not covered yet is option "N" CREATE MEM.SAV. If you choose this option, a file called "MEM.SAV" is created and put on your diskette. The only function of MEM.SAV is to save your BASIC program whenever you type the BASIC DOS command. Before DUP.SYS is loaded into memory, your BASIC program is saved to disk. Later when you RUN CARTRIDGE, your BASIC program will be placed back into memory. Using MEM.SAV increases the time it takes to go to DOS and to return from DOS. If you regularly save your BASIC programs, you do not need MEM.SAV.

For 64K Machines Only. If you own an 800XL (or an 800 with 64K of memory) and want to use DOS 2.0, a "must-have" is the XL-DOS modification that appeared in the November, 1984 issue of ANALOG. XL-DOS stores both DUP.SYS and the MEM.SAV file in the normally-unused top 16K of memory. Both of these functions have been rewritten to allow instantaneous loading of DUP.SYS file from memory, with MEM.SAV always active. If you are impatient or your time is valuable, this is a marvelous utility. From BASIC, when you type DOS, the DOS menu instantly appears. When you return to BASIC, which also happens instantly, your BASIC program is still intact just the way you left it. This program is on ANALOG Disk #24 which is available in the NOVATARI disk library as well as that of other user groups in the area. One word of caution though, this DOS modification will only work on 64K machines. If you try to boot an XL-DOS disk on an old 800, it won't work.

Of course, Atari DOS is only one of several different DOSs, all of which will run on your computer and in your disk drive. Next month I'll talk about DOS XL (by OSS, Inc.). This DOS, or a variant of it, is often provided with ATARI disk drives made by third parties such as INDUS, PERCOM, or TRAK.

==========

Here's a short little graphics program that illustrates the use of GRAPHICS 9 which uses one color with 16 possible shades. Use SETCOLOR 4,Color,0 to choose a "Color". Then, use the COLOR statement (COLOR 0 to COLOR 15) to choose the various shades before you PLOT or DRAWTO.

```
0 GOTO 140
10 REM HALLWAYS, By Joe Waters
20 REM NOVATARI,  March, 1985
30 REM ====Draw a Box====
40 PLOT X1,Y1:DRAWTO X2,Y1:DRAWTO X2,Y
2:DRAWTO X1,Y2:DRAWTO X1,Y1:RETURN
50 REM ====Change Luminance====
60 CV=CV+1:IF CV=CM THEN CV=0
70 COLOR CV:RETURN
80 REM ====Set New Box Corners====
90 X=X1:D=DX1:M=XM:GOSUB 100:X1=X:DX1=
D
92 X=X2:D=DX2:GOSUB 100:X2=X:DX2=D
94 X=Y1:D=DY1:M=YM:GOSUB 100:Y1=X:DY1=
D
96 X=Y2:D=DY2:GOSUB 100:Y2=X:DY2=D
98 RETURN
100 X=X+D:IF X<0 OR X>M THEN X=X-D:D=-
D:GOTO 100
102 RETURN
120 REM ====Pick New Color====
130 SETCOLOR 4,RND(0)*16,0:RETURN
140 REM ====Initialize Variables====
150 GM=9:XM=79:YM=189:CM=16:CV=1
155 REM For variety, change initial
        starting values of x & y.
160 X1=0:Y1=0:REM TOP LT CORNER
162 X2=XM:Y2=YM:REM BOTTOM RT CORNER
164 DX1=1:DY1=1:DX2=-1:DY2=-1
166 REM For more strange effects, try
        changing "Delta" x and y.
180 REM ====MAIN LOOP STARTS HERE====
190 GRAPHICS GM+16:GOSUB 130:TIME=0
200 TIME=TIME+1
201 GOSUB 40:REM DRAW BOX
202 IF TIME=2 THEN GOSUB 60:TIME=0:REM
 CHANGE LUMINANCE--TRY TIME=1 OR 3 FOR
 MORE OR LESS DEPTH.
204 GOSUB 90:REM CHANGE BOX SIZE
210 IF PEEK(764)<>255 THEN GOSUB 130
220 GOTO 200
230 REM ====Repeat Loop Forever====
```

Benchmark Tests

by Bob Danson

As long as there are computers the topic of bench marking will continue to be of fascination. For example, between the time I wrote last months article and its' publication, Bill Wilkinson (COMPUTE!, February 1985, page 139) also discussed benchmarking and has some interesting observations about ATARI BASIC and interpreting the results of the David Ahl "Sieve of Erastothenes" benchmark (published in BYTE magazine). I recommend its' reading.

Last month I presented some benchmark timing results for one small program and showed that by using a BASIC other than ATARI's I could get dramatic reductions in the programs' execution time. But that program, and resulting reductions in execution time, are somewhat atypical of "real" programs. This month I'll look at program DRAWHAT, which is on D.C. Library Disk #12, and generates the picture shown.

DRAWHAT is significantly different from the program examined last month in that it utilizes extensive floating point arithmetic and therefore cannot be run with the Monarch ABC compiler, or the MMG compiler using the integer math option. We'll see that the execution time for DRAWHAT will be reduced in much smaller proportions than were the execution times in last month's article.

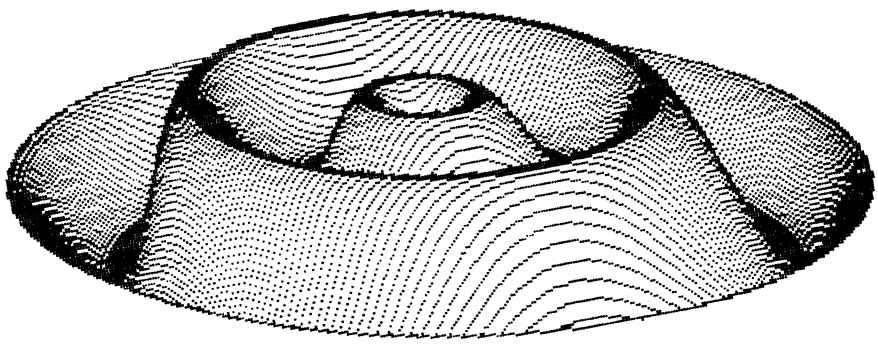
DRAWHAT consists of two important sections: a one-line FOR loop that calculates a table of values (line 501), and a larger double loop that computes the screen co-ordinates and plots the picture points (lines 10 through 60).

The speed of the one-line FOR loop should be very heavily dependent upon the rate at which the SIN functions are evaluated. But there are other computations in the loop and their contribution to the execution time can be determined by running the loop with and without the SIN functions. Since there is no benefit in viewing a blank screen during the computations, it is turned off for all tests. The execution times are in minutes:seconds.

ATARI 800 - FASTCHIP installed

	whole loop	without SINs	SINs
ATARI BASIC	2:36	0:35	2:01
using BASIC XL with "FAST" statement	2:28	0:21	2:07
using MMG Compiler with f.p. math	2:32	0:16	2:16

I was suprised by the results. While the timing differences are very small, I expected that the object code produced by the MMG compiler would be the fastest. And the MMG loop without the SIN



```
5 GOTO 1000
10 FOR ZI=-Q TO Q-1
16 IF (ABS(ZI)>ZP) THEN 60
20 ZIQ=-ZI+Q:ZIP=ZI+P:ZT=ZI*X-ZP:ZTT=Z
T*ZT:XL=INT(0.5+SQR(XPXP-ZTT))
29 IF XL=-Q THEN 60
30 FOR XI=-XL TO XL:XT=SQR(XI*XI+ZTT)*
XFT:U=XI+ZIP:V=191-(S(XT)+ZIQ)
38 IF V<0 OR V>191 OR U<0 OR U>319 THE
N 50
39 COLOR 1:PLOT U,V:IF V>189 THEN 50
44 IF V>=VHI(U) THEN VHI(U)=V:GOTO 50
45 COLOR 2:PLOT U,V+1:DRAWTO U,VHI(U)+
2:VHI(U)=V
50 NEXT XI
55 GOSUB 22270
60 NEXT ZI:RETURN
501 FOR I=0 TO 2901:IT=I*T:S(I)=(SIN(I
T)+SIN(IT*3))*YF4:NEXT I:RETURN
999 REM
1000 CLR :T=(2*3.1415927)/2900
1001 RAD :P=160:Q=100:XP=144:XR=1.5*3.
1415927:YP=56:YR=1:ZP=64:XF=XR/XP:YF=Y
P/YR:ZF=XR/ZP:YF4=0.4*YF
1002 XPZP=XP/ZP:XPXP=XP*XP:XFT=XF/T
1010 TRAP 30000:DIM S(2901),VHI(320)
1014 M=3:MX=38:MY=22:GRAPHICS M+16
1015 SETCOLOR 0,2,4:SETCOLOR 1,7,4:SET
COLOR 2,3,2:SETCOLOR 4,0,0
1016 POKE 559,0
1017 REM TURN SCREEN OFF WHILE CALC
1020 RAD :K=0:GOSUB 501
1050 REM
2000 GRAPHICS 8+16:SETCOLOR 2,9,0:SETC
OLOR 4,9,0:SETCOLOR 1,1,12
2030 FOR I=0 TO 320:VHI(I)=0:NEXT I
2060 GOSUB 10
2070 POKE 559,34:POKE 764,255
2080 GOTO 2080
3240 END
4090 REM
22270 REM SCREEN ON/OFF
22275 IF PEEK(764)=143 THEN POKE 559,0
22277 IF PEEK(764)=142 THEN POKE 559,3
4
22280 POKE 764,255:RETURN
30000 REM ERROR TRAP
30010 GRAPHICS 0+32:POKE 764,255:STPLN
=PEEK(186)+256*PEEK(187)
30100 ? "ERROR ";PEEK(195);" OCCURRED
AT LINE ";STPLN;".":STOP
```

functions is faster - but the time required for the MMG SIN function evaluations is greater! More about the SIN function later.

The computational and plotting portion of the program comes closer to what might be generally expected:

ATARI 800 - FASTCHIP installed		
ATARI BASIC	BASIC XL with FAST statement	MMG Compiler with f.p. math option
31:49	24:37	22:32

(To obtain execution times with the screen display on, multipy the above times by 1.41) While reductions in the execution time is provided by BASIC XL and the MMG compiler, the extent of those reductions is limited by the use of significant amounts of floating point math, which is performed by the FASTCHIP, a function that the BASICs can't alter.

Benchmarks are run not only to determine relative exectuion times, but also to determine if the "correct" results are produced. (It's not always clear what is a "correct" result. When the required computational results are not precisely known, such as in economic modeling, it can debated as to what a "correct" result is.) But before a set of results' merits can be argued it's important that the program produce consistent results from run-to-run. When values used in DRAWHAT are printed, the ATARI and OSS BASIC give identical results, but the MMG results differ slightly. For example, a small sampling would show:

ZI	XI	U	ATARI/OSS V	MMG V	V difference
-2	-57	101	52.95354	52.953523	.000017
-14	-44	102	58.419717	58.419771	-.000054
-18	-41	101	44.204764	44.204795	.000031

While the differences are small, similar differences in other applications could be significant. To determine why the differences occur, another small program was run in which a sample of floating point computations and the results of SIN functions were printed. Since the MMG compiler object code uses the "FASTCHIP" for its' floating point computations, floating point computational results for MMG object code should be identical to that procuced by the interpretive BASICs, and they are. But the SIN function values returned by the MMG compiler code differs from values generated by the ATARI and OSS BASICs (remember that ATARI BASIC was written by OSS) in the tenth digit. When used in computations the results of these differences can be expected to propogate, as shown above. Which is correct? - probably both. The OSS "Reference Manual for BASIC XL" states that "In general, numbers have a 9-digit precision. ...10 significant digits in the special case where there are an even number of digits to the right of the decimal point". The differences in the tenth digit of the SIN function values seem plausable from the OSS description of ATARI floating point numbers. In a casual comparason of the ATARI/OSS and the MMG SIN values to higher precision SIN values obtained on another computer, neither appeared to be significantly more accurate. (The verification of the OSS and MMG trig functions would be a good project for someone interested in the topic.)

Even the most experienced and knowledgable computer users tend to think of computer results as always being correct and accurate, even when we know that there limitations imposed by the systems' hardware and software architecture and implementation. And we all know, of course, that a computer never makes an error - but that's a topic for another time.

If anyone has additional ideas for further testing, let me know.

This article mentioned or used the following products on an ATARI 800 with OS ROM B: ATARI BASIC, Rev. C, Newell Industries FASTCHIP, Optimized Systems Software (OSS) BASIC XL, Ver. 1.02, Monarch Data Systems A BASIC Compiler (ABC), Ver. 1.03, MMG Micro Software BASIC Compiler, Ver. 2.0

I have found that all the above products, except the MMG Compiler, have meet my programming needs and perform with few, if any, significant problems. If you are interested in the MMG Compiler I urge you to talk to me before purchasing it.

Computer Caverns

by Jay Gerber

The purpose of this column is to teach Basic programming techniques through the means of writing an adventure game. As we work our way through the program, every step will be thoroughly explained, and when the program is finished, you should have the skills to accomplish any programming task set before you.

First off, we must decide the function of the program, what we must put in (input), and what we want back from it (output). A program as complex as an adventure game will obviously have several different input and output factors. Before we can start listing them, however, we must define exactly what an adventure game is.

An adventure game is a series of puzzles which the adventurer, presumably the one that is playing the game, must solve. Interaction between the computer and the player is usually in the from of sentences, either two or more words. The computer describes what is happening, and asks the player for his response. The player then types in exactly what he wants to do. The computer then processes this reponse, and then furthers the action, and the cycle continues until either the player solves the adventure, or he dies.

Now, we must think about how to program the computer to get the results we want. First of all, we need to figure out the 'world' in which the adventure will take place. We need to design and map out all the possible places that the player can explore.

Next, we must decide what will go in these rooms. Furniture, tapestries, clothes, pieces of gold are all things that have to be thought up. After you have a description of what each room looks like, you must decide which objects can be taken from one room to another.

Since an adventure must have puzzles to solve by definition, traps and situations must be thought out and be noted within in the room(s) in which they occur. For instance, if a magic wand found in room A is needed to open a secret hidden door in room B, then in your description of room A, you must add the wand, and in the B description, note that a wand is needed to enter the secret door.

That should be enough to get you started planning the adventure. Remember that you must have puzzles that are not so obvious or easily solved. The actual programming of a good adventure is easy, the planning and designing are more difficult. Good Luck. I'll see you next month.

AURA
Atari Users Regional Association

A.U.R.A. Minutes: February 6
by Rochelle Follender

Discussion: Slate of officers as listed in Current Notes was affirmed unanimously. Members were asked to complete survey form to help guide direction of meetings. Magmedia sales rep displayed products. Current Notes is improving in quality, distribution, and financial position with each issue. Bill discussed new library disk #38 and asked for heop in completing documentation of library disks. John brought up possibility and advantages of joining ARMUDIC BBS. Group questioned its ability to support more users. Scott Kline volunteered to consult with Chris (ACA) about possibility of resurrecting ACA's BBS. Your Atari Computer by Poole was primary recommendation as a good reference for beginners.

Demonstrations: Robot and spaceship on new Atari demo disk shows the capabilities of the GTIA chip. Bill demo'd slide show program on disk #38. Bruce showed slides of the CES show in Las Vegas and distributed handouts. He also demo'd a draving program he is contributing to the club. Mike Kerwin demo'd a menu program which will work on double density disk drives. He contributed it to the club.

CPM
Capital ATR Peripheral Micro-Users Group

The next ATR meeting is scheduled for March 26, 1985, at 6:30 p.m. (the fourth Tuesday of the month).

Disk Library News

Since the last Current Notes, new volumes have been added to the library and files on existing disks have been updated. The new CP/M volumes which have been added are: ATR FORTH (FIG-FORTH, modified by Frank Jones to run on the ATR); Word Processing #1 (a footnote utility for WordStar, a disk to printer utility, a one-drive disk file copy program, a calculator program, and a review/tutorial on Word Plus); and Data Base Disk #3 (programs for use with dBase II), a disk program catalog system, a dBase tutorial, a screen graphics dBase program, mailing list program, dBase text file search programs.

Our first MS-DOS library disk has been released. It contains over twenty-five public domain programs plus documentation files, including a RAM disk utility and a enhanced MS-DOS version of NSWEEP. Documentation files are in a sub-directory - see the READ.ME file.

Files on two older CP/M disks have been updated. The Telecommunications Disk #1 file of RCPM BBS telephone numbers has been revised and the Disk Tool Disk #1 DU program has been updated. Members who have purchased these disks may have the updated files copied to their library disks by bringing them to a monthly ATR meeting.

The final order for DT-80 cartridges was placed and delivery was made at the Feburary meeting. There will be no more club orders, at the discounted price, placed for the DT-80 cartridge in the forseeable future.

NOVATARI
Northern Virginia Atari Users Group

Minutes, February Meeting
By Georgia Weatherhead

ELECTIONS. Palmer Pyle presented the slate of candidates for NOVATARI officers for 1985 with one change from last month's announcement. Terry White will be using his efforts and time on advertising for CURRENT NOTES so he withdrew his name for the office of secretary. The slate elected was Joe Waters as President, Jim Stevenson as Vice President, Curtis Sandler as Treasurer, and Georgia Weatherhead as Secretary.

After a demonstration of PROTECTOR, the program was offered as a door prize. The second door prize was a choice from disks in the club disk library.

The new membership list shows that while we have members distributed over several counties in northern Virginia, our meetings are held on the edge of our membership territority. Joe Waters asked for volunteers to serve on a relocation committee to search for new meeting places more centrally accessible to all. If you wish to serve on this committee, or know of meeting places that will accommodate 100 or more persons easily, please contact Joe Waters.

Because of our large turnout, NOVATARI also needs a microphone for our program speakers to be heard. If you can help in this area, please call Joe.

PROGRAM. Diana Burdt, Education Chairperson, introduced the guest speaker. Fran Gallagher is with the Department Instructional Services for the Fairfax County Public Schools. As a sixth grade teacher at Wolftrap, she participated in the first experiments with computer education. She was to use the computers with the Gifted/Talented program but she also used them with her class, and became convinced computers were for everyone.

Atari computers are used in the B.C.P. Schools kindergarten through ninth grades. The first grassroots plans began in 1977 with G/T classes using Hewlett-Packard 3000 mainframe terminals that were located in the schools for administration purposes. Three summer school sessions worked on building a curriculum guide. Because of the cost of supplying computers to all class rooms in 125 schools, computer literacy was the thrust as opposed to computer-assisted (C/A) education or computer-managed (C/M) education. With computer literacy 80 percent of instruction is off line. Now that the price of hardware and software is decreasing the school system is piloting

programs for C/A and C/M education. The county is waiting til April to examine the ability and compatability of the new Ataris before deciding whether to use Atari for the computer-assisted education.

In grades k-4, LOGO is being used. LOGO and PILOT are used in grades 5-6 with BASIC for grades 7-9. PASCAL is used in some of the high school classes.

There is a place for Atari computer enthusiasts to aid the county. Student programmers, 16 years old or over, are wanted as aides in the summer school. They will be paid (moderately). Call the Office of Instructional Technology, 978-0075. Adults who are familiar with the "SYN" series can help the teachers learn them. These are areas where Atari enthusiasts can help the public schools.

President's Notes

By Joe Waters

Where to Meet? We are looking for a new place to meet. The Greenbriar Community Center is relatively far for most of our members. We'd like to find a location more central so as to minimize the commute time to the meetings. There aren't that many places that can hold 100 to 200 people. We would also like to find a number of smaller meeting places, hopefully free or at minimal cost. We need places where regional or special interest groups could meet. In addition, although we would like to offer more seminars, we need someplace to teach the courses. Is their a library in your neighborhood available? How about a private school with facilities they might rent? What about where you work? Would it be possible to have meetings (small or large) there? Anyone with suggestions please give me a call. If you don't like traveling far, there is a simple solution: find a place close to home.

ARMUDIC Update. As many of you are aware, ARMUDIC has been down for quite some time. I hope it will appear again this month. The switch to the "FOREM" software did not go as smoothly as we would have liked. FOREM is written in BASIC XL and, it appears, there was a difficulty in doing concurrent I/O through the 850 interface module which caused the system to crash repeatedly.

This problem had not appeared before because no one had ever tried it with an 850. The other FOREM boards in the area are running with an ATR for the interface rather than the 850. They have experienced no troubles. To try and get the system up and running, NOVATARI and NCAUG purchased an ATR 8000 to replace the Atari 850. Unfortunately, the ATR that arrived had a problem with it and that hardware had to be returned and more time was lost waiting for a new one.

Frank Huband, the original creator of ARMUDIC, has graciously volunteered his time to help get the system back up and operational again. At this writing, everything is at Frank's house and he is working on the problems. I can only say, be patient. ARMUDIC will be back again and it will be bigger and better than ever before.

Library Notes. Evan has asked me to inform those of you who purchased ANALOG #27 in February that there are some programs that were inadvertendly not put on the disk. Bring your disk back to the March meeting and trade it in for a new one.

Our library continues to grow at the anticipated two-three disks per month. For those of you who haven't been able to attend some recent meetings, let me review what is now available.

GAME DISK #1 - Text Adventures (Crash Dive, Adventure in the 5th Dimension, Kidnapped!, and Operation Sabotage).

GAME DISK #2 - Gambling Games (Blackjack, Five Card Stud, Gambler's Dozen, Progressive Jackpot, Poker Squares)

GAME DISK #3 - Simulations (Broadway, Civil War, Dairy Farming, Dark Horse, Kingdom)

GAME DISK #4 - Maze Games (Dragon Maze, Hidden Maze, Caves of Ice, The Halls of the Lebrechaun King, Maze Maniac, Master Maze, Maze Race, 3-D Maze, OMAZE)

GAME DISK #5 - Parlor Games (Othello, Battleship, Monopoly, Mille Bornes, Yahtzee, Simon, Solitaire)

MUSIC DISK #1 - TV/Movies (Brian's Song, Cheers, The Entertainer, EWOK Celebration, Knight Rider, Mash, Raiders of the Lost Ark, Star Trek, Star Wars, Yakety Sax, The Sting, I'd Like to Teach the World to Sing)

MUSIC DISK #2 - Rock (Beat-It, Eye of the Tiger, Thriller, Still Rock 'N Roll to Me, Earth, Wheel)

EDUCATION DISK #1 - Mathematics (Board, Drill, Function Machine, Line, Mathkids, Mathprac, Mathquiz, Mathtime, Multiply)

TELECOM DISK #1 - 850 Interface (Amodem Plus Version 4.4, Amodem Plus XL Version 2.5, Autodial, Tscope--for use with CompuServe--and Disk Transfer). Complete documentation files are on the back of the disk.

UTILITY DISK #1 - (CASDISK-Converts boot tapes to disk format, SECEXAM-prints contents of a disk sector,HEXDEC-converts between decimal and hexadecimal, MAKEAUTO-creates an AUTORUN.SYS file to run your BASIC programs, TIMECLOCK-puts a digital watch in upper right-hand portion of screen, and more...)

Several more new library disks will be available in March including a second telecommunications disk for owners of the Atari 1030 modem, and utility disks with tax templates (one for SynCalc and one for VisiCalc). In addition, we now have ANTIC disks from the current month back through June of 1984.

Acquisitions. Palmer Pyle reports that, for the first time, we were able to have enough diskettes on hand to meet the demand. Expect this to continue. We also have available some extra copies of the text books used in the Introductory ATARI BASIC course (Inside Atari Basic) and the Introduction to Assembly Language (Atari Roots). If you would like a copy, see Palmer at the March meeting.

Coming Events. At the February meeting, I announced that we would discuss disk drives in March. However, I would

like to change that around a bit. Since March is tax time for so many people, our March meeting will cover electronic spreadsheets, in particular, SynCalc from Synapse. Hopefully, we can also demonstrate how some of these "tax templates" work. The discussion of disk drives and disk operating systems will be presented in April. In May the program will cover telecommunications -- how you use your Atari to call up BBSs and other information services. By the way, I am looking for a new program chairman. Any volunteers?

WACUG

Woodbridge Atari Users' Group

President's Notes

By Jack Holtzhauer

Inasmuch as our editorial deadline mandates that this be written two weeks before our February meeting, there's not much to report since we last got together. I would like to take this opportunity, however, to welcome Foye Brewer, Charles W. Freeman, Robert D. Galloway, Kell R. Hoovler, David T. Lipp and Brian S. Miller, all of whom joined WACUG during early February.

All members should be warned that access to the permanent disks in the group's library will suspended during the period March 9th thru March 15th. Arnie Turk, our librarian, and several assistants will be up-dating the library during that period. We are hopeful we will be able to distribute new library indices to all members during the March meeting. To help ensure the success of this project, please do your part by returning prior to March 9th all disks now on loan. Please note that Temporary or "T-numbered" disks are not involved in this project and will be available for loan as usual.

What's on the agenda for the March meeting -- a demo of Scarborough System's financial tracking program "Your Personal Net Worth" and a wide variety of educational software targeting pre-schoolers thru teenagers, including "WORD BUILDER", written by Joe Waters of NOVATARI.

CURRENT NOTES

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Washington Area Atari Computer Enthusiasts

Atari Users' Regional Association

President.....	Marshall Abrams	588-1005
Vice President	John Barnes....	652-0667
Treasurer.....	Richard Stoll..	946-8435
Corr. Sec.....	Bruce McLendon.	587-7890
Membership....	William Pimble.	341-9572
Librarian.....	William Schadt.	622-1547
Hardware Coord	Moe Sherman....	593-1076

Meetings: 1st Wednesday of every month, 7:00 pm, Room One, Long Branch Public Library, Garland Avenue, East Silver Spring, MD. Take the Beltway (I-495) to Exit 29-B, South University Blvd. East, (Route 193). Follow University Blvd. East to 2nd light (Piney Branch Road), turn right on Piney Branch Road, continue to 2nd light (Arliss Street), turn right on Arliss past the apartments to Garland Avenue, turn right on Garland. The Long Branch Library is on the corner. Park in the library's lot.

New Members: Dues are $15/year (includes subscription to Current Notes). Mail check, payable to AURA, to Treasurer, AURA, P.O. Box 7761, Silver Spring, MD 20907.

Capital ATR Peripheral Micro-Users Group

President...	Bob Kelly.....	301/839-7377
VP-Programs.	John Lauer.....	703/698-1243
VP-Commo....	Bob Danson.....	703/780-0758
VP-Finances.	H. Carpentier..	301/630-4945
VP-Library..	Mike Abramowitz	301/983-2362

Meetings: 4th Tuesday of every month, 6:30 pm, Author Room, Public Library, Oxon Hill, Maryland. The Library is located near the Woodrow Wilson Bridge just off the Washington beltway. Take the beltway to Maryland exit #4 East (St. Barnabas Road). St. Barnabas Road merges immediately with Oxon Hill Rd.; proceed 1/4 mile and Library will be on your left. The Library telephone number is 301-839-2400.

New Members: Dues are $15/year (includes a subscription to Current Notes) or $3/year (no subscription). Send check, payable to Henri Carpentier, to Henri Carpentier, 5929 Fisher Road #12, Temple Hills, MD 20748

National Capital Atari Users' Group

President..	Frank Huband...	703/527-4770
Treasurer..	Allen H. Lerman	301/460-0289
Membership.	Gerald Whitmore	301/459-6164
Programs...	Art Corte.....	703/437-7860
V-Programs.	Jim Campbell...	703/425-1440
Tape Lib...	Bruce Ingalls..	703/430-3287

Meetings. 3rd Tuesday of every month, 5:30-8:30, Room 543, National Science Foundation offices, 1800 G. Street NW, Washington, DC. The closest subway stop is Farragut West, on the Blue and Orange lines. Take the 18th Street exit, and walk south (against the flow of traffic) down 18th Street for three blocks to G street. The building, on the corner of 18th and G, can be identified by a sign for the Madison National Bank on the corner. Parking is available in the building for a fee. The front entrance is on the west side of 18th street, between F and G.

New Members: Dues are $15 (includes subscription to Current Notes) or $5 (no subscription). Send checks, payable to National Capital Atari Users Group, to Allen Lerman, 14905 Waterway Drive, Rockville, MD 20853.

Northern Virginia Atari Users Group

President.....	Joe Waters.....	430-1215
Vice President.	Jim Stevenson..	435-2962
Treasurer.....	Curtis Sandler.	734-9533
Secretary.....	G. Weatherhead.	938-4829
Membership.....	Earl Lilley....	281-9017
Training.....	Marty Vallery..	425-6832
Education.....	Diana Burdt....	425-5073
Disk Librarian.	M. Evan Brooks.	354-4482

Meetings: 2nd Sunday of each month, 5:30-8:30, Greenbriar Community Center, 4615 Stringfellow Road, Chantilly, VA. Stringfellow Road, (Route 645), runs south from US 50 about 2 1/2 miles west of Fair Oaks Shopping Mall (I-66 and 50). The Greenbriar Community Center is 1.4 miles south of 50. Small parking lot in front, larger one just north of Center. 5 to 6:30: general discussion, product sales, ad hoc demos; 6:30 -7:00 business meeting; 7:00-7:30 product demos, door prizes; 7:30-8:30 program.

New Members: Dues are $15 (includes subscription to Current Notes) or $5 (no subscription). Send checks, payable to Novatari, to Curtis Sandler, 7213 Idylwood Ct., Falls Church, VA 22043.

Woodbridge Atari Users Group

President....	Jack Holtzhauer.	670-6475
First VP.....	Dave Marrandette	670-7675
VP-Education.	Tim Mitchell....	221-7722
VP-Liaison...	Cecil Alton.....	670-4842
Secretary....	Mike Stringer...	786-8755
Treasurer....	John Thomas.....	670-8645
Librarian....	Arnie Turk.....	670-2547

Meetings: Monthly, 7 - 10 pm, Community Room, Potomac Branch, Prince William County Library, Optiz Blvd., Woodbridge, VA. Meeting dates: Wed, MAR 27; Wed, APR 24; Wed, MAY 15; and Wed, JUN 19. Entering Woodbridge from either North or South on Route #1, proceed to the intersection of Route #1 and Opitz Blvd. (adjacent to Woodbridge Lincoln-Mercury). Turn West onto Opitz and take first left turn into the library's parking lot. The Community Room is located to your left immediately upon entering the main building.

New Members: Dues are $10/year plus $1 monthly dues (includes subscription to Current Notes). Send checks, payable to WACUG, to Mike Stringer, 709 Rutherford Dr., Fredericksburg, VA 22401.

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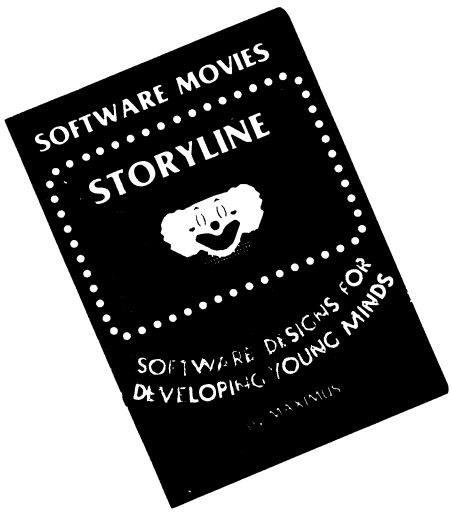

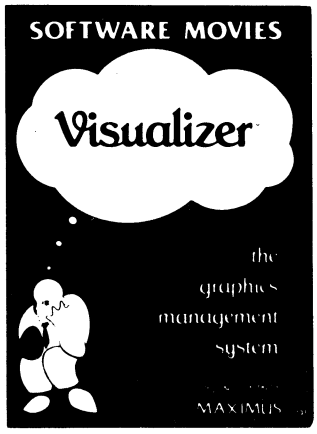

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